THE BUILDER

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ARCHITECTURAL PHILISTINES

MR. E. GUY DAWBER, in his recent presidential address to students, took the opportunity to express his views upon the question of public taste in architecture. As a topic it seems inevitable and inexhaustible. Year after year it has received the attention of men who combine special knowledge with a wide outlook on affairs, yet, broadly considered, there is a sameness about the conclusions. Our sympathy with the aim of those who desire to raise the level of architecture is unqualified, even if we are inclined to question the wide application of education in its relation to public taste.

No architect, we imagine, will disagree with Mr. Dawber when he says: "The indifference of the public to the importance of civic duty is a lamentable and tragic fact." We believe this assertion to be a plain statement of the truth, but the following passage can hardly be considered to be a complete diagnosis of the disease: "There cannot be good architecture in any country unless there is a public demand for and an appreciation of fine work." On the face of it there is a great deal of truth in the statement, but it clearly is not the whole truth. A demand for good architecture and an appreciation of it are two different things, and need not necessarily be the operations of cause and effect. There is, perhaps, more truth in the statement that there cannot be good architecture unless we have good architects, and—what is of more importance still—unless they are employed. It surely cannot be true that architects produce bad buildings because their clients do not appreciate good architecture. If it is a reason, it is extremely difficult to see what architectural help the public can be expected to extend to the architect beyond employing him. On the other hand, if the real reason is that the public neglects the services of the architect, there can be no harm in stating the fact clearly. Instead of assuming that the public is at fault, we have to decide where it is at fault.

There are a number of aspects of the question which might profitably engage the serious attention of architectural students. As intellectual exercises they would be invaluable, quite apart from the benefit to be derived from an objective examination of architecture supplementary to studies purely architectural. But first of all let the student begin with this advice in mind, that it is easy to dissipate blame for his own imperfections by giving way to facile generalisations. It is the first step downwards. No architect can produce real architecture working in a tradition of exclusiveness and boredom. He may think that the attitude of the public towards architecture is one of indifference—and it is probably a correct assumption—but the matter does not begin and end there. In his examination of the subject he should try to avoid the lure of the industrial revolution, which, as a ready excuse, has already worn a smooth track in art criticism. He should also resist the critic's temptation to abandon the criticism of art until he has thoroughly cleaned up the social state.

Historically, architecture has always been sensitive to changes in the prevalent demand, and the question arises whether this condition will continue in the future. It is now becoming a debatable point whether architecture should be indicative of the tastes of the people or the cultured taste of the architect. The taste of a nation might be said to be its appreciation of the architect. Æsthetically, it is important to consider whether the theory and practice of architecture, as a product of specialised training, should be expected to mark time with public taste. As our knowledge increases so does the growth of specialisation. Consequently, in a highly-developed form of civilisation, public thought on any particular subject may remain stationary, or even atrophy from lack of exercise and opportunity. We learn that in the seventeenth and eighteenth centuries a gentleman with any pretensions to good taste was naturally an amateur in the art of building. As a result, the Palladian country houses, which to-day seem to be regarded as white elephants, are excused on the plea that fashion dictated the style, and that domestic comfort was not the first requirement of clients. To put it otherwise, the architect was influenced by clients who knew a little too much about architecture.

By way of contrast, it is interesting to re-read Mr. H. S. Goodhart-Rendel's presidential address at the Architectural Association: "But there are still to-day among those who build—and Heaven be thanked for it!—many people who have no taste whatever, and who do not care two straws what their building looks like provided it serves its purpose. For these the architect can do his best work, stimulated by his employer in his pursuit of efficiency, and unhampered by him in his pursuit of beauty. For these honest and blessed philistines the architects can build the models which persons of taste will be as glad to imitate as they would have been unwilling to inaugurate." Many architects will endorse these sentiments. They confirm our opinion that there is a world of difference between a client educated in architecture and a client educated to the belief that he should consult an architect and leave the matter to him. This aspect of the question leads us to ask what is meant when it is suggested that the public is not sufficiently educated in architecture. We have frequently heard the comment from architects, in explanation of our ugly modern houses, that nothing better could be expected taking into consideration the type of people and their lack of education in these matters. What they meant to convey was that architects were not employed. Very little discussion reveals a difference of opinion upon what is meant by education. It is not a hair-splitting argument which endeavours to separate specialised knowledge from a conception of education which embraces good manners, culture, taste, and a due regard for the social conventions. Everyone, it is said, has his pet form of snobbery, and the desire to do the "correct thing" is one of them, which we believe has much to commend it.

The thoughtful architectural student might profitably examine the convention which governs our clothing. Some years ago an engaging little book was written upon the organic relation of dress to architecture, and, although we may not be particularly interested in the history of costume, we realise that the cheap ready-made house is as serious an architectural solecism as that of the ready-made suit in the ritual of clothing. Any one who has any doubt about the influence of convention will agree that "to-day a man will live in a 'mixed' house and worship in a 'mixed' church, and never feel a twinge of incongruity, but nothing would induce him to go from house to church in a top hat and toga." The profound observation that "it is impossible to tell if next year's well-dressed man will have two or three or even four buttons on the sleeve" seems frivolous, but who can doubt the significance of a convention which receives so much fashionable curiosity and criticism? If our houses were included in this social category, we venture to suggest there would be no need to discuss the philosophy of education, or to worry about the architectural education of the public. "Already 'nice people' prefer to live in a cottage and keep a good car." A social convention which cultivated good manners in building is one of the things we have allowed to lapse. This belief carries with it the suspicion that the golden ages of architecture may represent the fruits of convention rather than a nation of critical æsthetes.

No one would wish to discourage the seeker after architectural knowledge, nor those who are anxious to impart it. We simply offer the suggestion that an education towards appreciation rather than education towards actual achievement is not without its dangers, nor is it certain that it contains the secret of an art which has, apparently, lost its way.

NOTES

Architectural Philistines. Our leader this week upon the question of education in relation to architectural taste is fortified, in at least one of its aspects, by the following extract from Mr. E. Guy Dawber's address to students (the italics are ours): —"Our profession, unfortunately, lends itself easy to the charlatan and the ill-informed, many of whom possess no architectural qualifications, and the inability of the public to discriminate between the good and the bad perpetuates the evil. *The only remedy lies in education.* We are doing our utmost to train you students to become good architects, to give you the best possible tuition to fit you for the positions you will ultimately be called upon to fill, and if we do this it is only right that the public generally should be educated to understand what architects are doing and striving for."

Education of the Public. To our minds the above extract really contains the essential elements of the whole trouble concerning public taste. We would strongly advise architects to concentrate upon and explore to the end this limited application of a theory of architectural education. There are certain to be a hundred different interpretations of what is meant by education, and it may please some to realise that the public is being educated in taste when it is being educated into an appreciation of the architect. With that we wholly agree; but it is an inverted method of reasoning, nevertheless, to avoid the direct method of approaching the subject. We therefore advise concentrating upon Mr. Dawber's point—that we are training students to become good architects, and the public ought to see that they are employed.

Public Taste. We are not excusing the public for failing to discriminate between good and bad architecture when we say that we honestly believe that the public does not offend against taste by taking deliberate thought. The truth is, the public is unable to distinguish between the instruments—between the quack and the professional architect. Quite obviously the absence of architectural taste is a consequence, but conversely we cannot assume that the question of taste is the deciding factor in leading the philistine to the fold of the architect. It should be an important factor, we grant; but, unfortunately, in a commercial age, we run the risk of reaching nowhere when we talk about a public educated in architecture or educated to understand what architects are doing, and forget to discuss the delicate question of ways and means. If the architect is not a luxury it surely can be proved. Assuming that it can, the problem of taste would be settled automatically, and we could then leave it to philosophers to work out whether education in taste was the result of architectural knowledge or merely common knowledge.

The Public and Building. There is an opportunity in the Building Exhibition for the public to become acquainted with the many methods of house-building and the resources of materials which it is desirable they should take full advantage of. The examples of houses built of brick, concrete, or steel, which are on view, will acquaint people with the scope and variety of modern methods. All the many modern labour-saving contrivances exhibited should also be of great interest in these days when economy of labour has become so important. The concern of the public in matters of building is very desirable, and the exhibition provides an opportunity of nearer acquaintance with all its details, and advantage should be taken of it. We cannot avoid the responsibility of knowing better about these matters because we are all concerned in the appearance of our streets and houses, and a better-informed public opinion is very desirable, quite apart from the advantage to ourselves.

The New Architecture. In his reply to Sir Reginald Blomfield on "The New Architecture" in the *London Mercury*, Mr. Manning Robertson differentiates very emphatically between the conditions of to-day and those of the past. In the many different kinds of building required to-day which hardly had any counterpart in former times, in the development of new methods of construction and materials, and with absolute need for economy, he sees forces which break down precedent and tradition and call for new treatment. That we shall ever see a spirit of mysticism coming into our modern architecture, as Mr. Robertson suggests, is perhaps the last thing the average man would expect in studying the hard, unlovely face of most modern work. But we must remember, says Mr. Robertson, that though a modern building be appropriate architecture because it is completely suited to its purpose, it will not necessarily be a work of art at all. Why, then, trouble ourselves about the artistic aspect? Let us give what is essential, what our clients ask for, avoid forcing on them artistic ideals they care nothing about, and so earn our fees pleasantly and safely. But Mr. Robertson hardly means this. He does not want architects and their training centres to "whirl idly in the eddies of public apathy in a country that has

From the Exhibition of Garden Designs at the R.I.B.A.

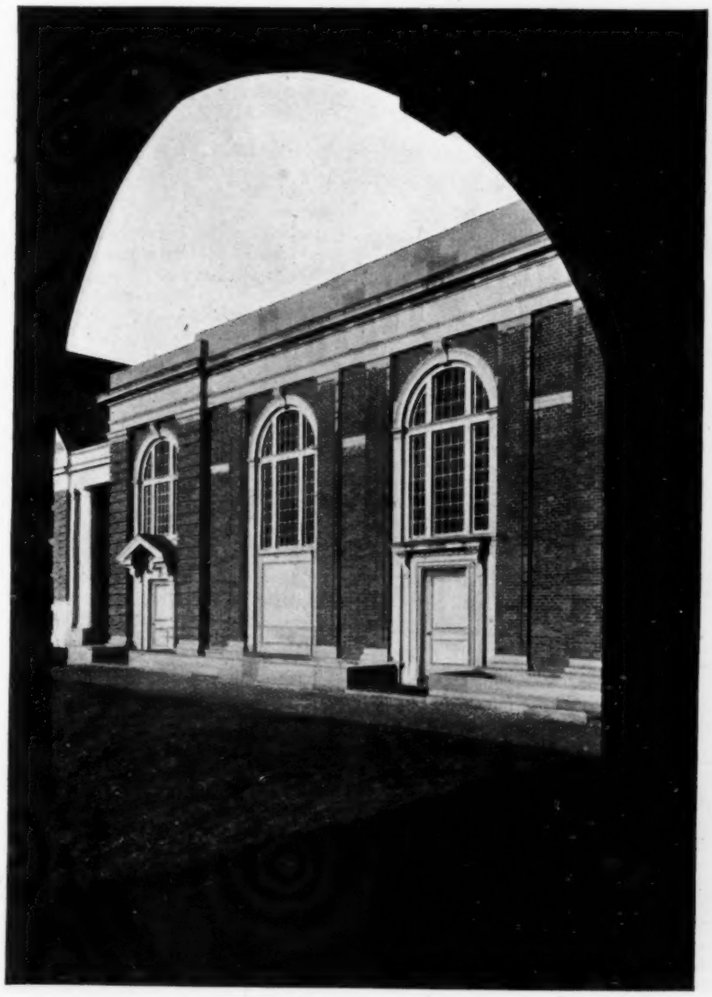
"Eyford Park," Gloucestershire.
Mr. E. Guy Dawber, F.R.I.B.A., Architect.

A House at Guildford.
Messrs. Baillie Scott & Beresford, Architects.

practically forgotten what architecture is." There is much that is reasonable in what Mr. Robertson says, but though we insist we have not cast traditions away, as many excellent buildings show, there will be many who sympathise with the impatience of Sir Reginald as we watch the supply of so much modern building which is really the kind of building our age deserves.

The Home Office. The allegations brought by Lord Newton and by the County Councils Association to the effect that the Home Office has unjustifiably attempted "to limit the scope of the Advertisements Regulation Act in a manner not intended by Parliament," will, we hope, be thoroughly sifted. It appears that the Home Office refuses to sanction by-laws for the prevention of disfiguring advertisements, except under severe limitations. The Home Office has issued a circular letter saying that such by-laws can only be approved in areas scheduled by the local authorities, and which "they regard and can defend as genuinely rural and suitable for protection in accordance with the intentions of the Act," also that "areas of a semi-rural character" should not be included. *The Times*, in drawing attention to this state of affairs, says that the mistake made by the Home Office seems to be a double one. In the first place, it has attempted to limit the area to which Parliament intended to give protection, and it has limited it in a perfectly definite way in directing the County Councils to "schedule areas which they regard and can defend as definitely rural." Government Departments are, as a rule, punctilious in not overstepping their powers, and we trust that the Home Office will reconsider this circular letter, which can only be described as reactionary and unjustifiable.

The Need of the Architect. We have only to walk through our streets, particularly the residential portions of our cities, to observe the lack of the architect. Houses go up in numbers in most districts of London, in which the architect's service is not made use of at all. This is much to be regretted, and it is a pity so little advantage is taken of his aid. Yet, until the client has more appreciation of the benefit of the architect's help in preparing plans, we shall be slow to reach improvement. This lack is specially noticeable wherever home-building of the middle-class kind is going on in our suburbs. If purchasers of houses would insist more on this architectural supervision, the gain would be considerable. Yet the idea of extra cost and the lack of appreciating the need still more, leads to much unsightly and unsuitable building. We are glad, however, to observe that the builder is more and more seeking himself the aid of architecture, and a change for the better is to be observed. And very noticeable is the improvement where this is the case. The extra cost of such help is probably less than the extra value realised by such improvement.



The Russell School, Ballards, Addington, Surrey
Dining Hall from Dormitory Cloister. (*See p.* 633.)

GENERAL NEWS

Appointments.

The Dean of St. Paul's has been appointed a trustee of the National Portrait Gallery, in the place of the late Sir Sidney Lee.

Mr. B. L. McMillan has been appointed Water Engineer to the Wolverhampton Corporation, in place of Mr. A. A. B. Woodward, who retired after 33 years' service.

Change of Address.

Messrs. Culpin & Bowers, town-planning advisers and architects, have removed to 3, Portsmouth-street, Lincoln's Inn, W.C.2. Telephones: Holborn 1896; also Ilford 1623 and Sydenham 3378.

Sheffield Suburb Housing Scheme.

We understand that the Hallam Grange estate, Fulwood, Sheffield, is to be developed by its owner, Mr. J. A. Knowles, of Crookes; the scheme embraces the erection of several hundred houses.

Obituary.

We regret to record the death, at Williton, Somerset, of Mr. Andrew Webber Hosegood, F.S.I., surveyor, aged 46.

We regret to record the death of Mr. John Langham, architect, of 24, Church-lane, Prestwich.

Surveyor's Estate.

Mr. Louis Alfred Westwick, of Mansfield, Nottinghamshire, architect and surveyor, formerly borough surveyor of Mansfield, has left gross estate of £29,868.

Liverpool University War Memorial.

Mr. Gordon Hemm, in collaboration with Mr. Charles J. Allen, R.B.S., has been commissioned to design the War Memorial for the University of Liverpool.

Hull Infirmary Extension Scheme.

The Board of Management of the Hull Royal Infirmary has under consideration a scheme, proposed by the House Committee, to provide seventy additional beds, at an estimated cost of £100,000.

Wages and Hours.

We understand that the negotiations between the representatives of the building trade employers and operatives with regard to wages and hours and allied questions are proceeding satisfactorily. It is hoped to bring the negotiations to a conclusion by May 1.

Lecture on Concrete.

A lecture will be given by Mr. Frederic Coleman, F.R.G.S., on "Substance, Form and Colour in Concrete," illustrated by cinematograph and lantern slides, showing examples of current architecture in concrete, in the Lecture Hall, at the Building Exhibition, at 3 p.m., on Wednesday, April 21. Mr. Ralph Knott, F.R.I.B.A., will occupy the chair.

Architectural Association of Ireland.

We have received the handbook of this Association for the session 1925–26. The Council is indebted to the Royal Institute of the Architects of Ireland for the Association being now housed as tenants of the Institute at 8, Merrion-square, N., Dublin. The membership now totals 139.

Eastbourne Church Restoration.

Funds to the amount of £400 have been raised towards the cost of restoring the outer stonework of the Parish Church, built during the Norman Period. The work has been put in hand, the method adopted having been approved by the Society for the Preservation of Ancient Buildings.

Limehouse Electricity Station.

The Stepney Borough Council proposes to extend the Limehouse electricity generating station at a total estimated cost of £590,000, the first part of which, to cost £398,000, is to be proceeded with immediately.

New Surrey Sanatorium.

The Chairman of the Surrey County Council recently cut the first sod on the site of the new sanatorium for the treatment of tuberculosis, which is to be erected by the County Council at Milford, near Godalming. The sanatorium will accommodate 300 patients, and will cost £211,000.

Special Election to the Fellowship.

Under the provisions of By-law 12 the following architects have been elected Fellows of the R.I.B.A.:—

Sir George Washington Browne, P.R.S.A. (Edinburgh).

Mr. Walter Hindes Godfrey, F.S.A.(London).

Mr. Harry Smith Fairhurst, A.R.I.B.A. (Manchester).

Belfast Housing.

Belfast Corporation has passed a resolution suspending certain officials pending the report of the special Committee appointed to investigate the report of the Government Commissioner, Mr. Megaw, K.C., who held an inquiry into allegations made in connection with the housing scheme promoted by the Corporation.

Roman Remains at Askrigg.

The Yorkshire Archæological Society has recently carried out renovation work on the site of an early Roman fort at Bainbridge, near Askrigg, Yorkshire. The ramparts of the four-sided fort stand on a hill top and enclose an area of two and a half acres. The main gateway facing east has been unearthed, and several remains of buildings within, which point to the position of the commandant's dwelling and the regimental chapel. The cellar is in a good state of preservation. Among the pottery finds are an olla and mortarium.

The Thames Tunnel.

Tonbridge Urban District Council has passed a resolution suggesting that in any scheme for tunnelling beneath the Thames east of London provision should be made for rail as well as road traffic. The council recognised that the projected tunnel from Dartford to Purfleet was a key to the solution of London's road-traffic problem, but urged that the existing Continental communication with the Midlands was inadequate. They further urged that the developments in the coal and iron areas of East Kent would need greater rail facilities with the Midlands and the North than the present routes could afford if their development was to proceed unchecked.

A Committee Abolished.

Little has been heard of the Committee that was appointed by Mr. John Wheatley when he was Minister of Health to inquire into alternative methods of building construction. Sir Ernest Moir presided over this Committee, to which some 400 methods and materials have been submitted. We learn that it was quietly dissolved last December.

New Chiswick School Opened.

A new Infants' Council School has been opened at Beverley-road, Chiswick. It has been built at a cost of £11,000 to accommodate 400 children. Mr. Willis, surveyor to the Committee, is the architect.

COMPETITION NEWS

Saffron Hill Cemetery, Leicester.

Leicester Corporation invite architects to submit competitive designs for buildings and lay-out of a new cemetery abutting on Aylestone-lane. Premiums of £100, £50, and £25 are offered. Mr. H. V. Lanchester, F.R.I.B.A., is the assessor. Conditions may be obtained on application to the City Surveyor, accompanied by a deposit of £1 1s. (cheques, &c., to be made payable to City Treasurer). Designs have to be sent in by Monday, July 12.

West Bromwich Permanent Building Society New Offices.

The successful architects in this competition are Messrs. John B. Surman and William T. Benslyn, AA.R.I.B.A., of 17, Easy-row, Birmingham. Mr. W. Alexander Harvey, F.R.I.B.A., was the assessor. All the designs submitted will be on exhibition at the Society's offices, 301, High-street, West Bromwich, during the week commencing April 19.

Pretoria Town Hall.

Twenty-seven sets of designs were submitted in this competition. The awards of the assessor, Mr. E. Vincent Harris, F.R.I.B.A., are as follows: (1) Messrs. F. Gordon McIntosh, Pretoria, and J. Lockwood Hall, F.R.I.B.A.; (2) Messrs. Harold Porter, M.S.A., Johannesburg, and A. Stanley Turner, A.R.I.B.A.; (3) Messrs. Deuchars & Pease, AA.R.I.B.A., Pretoria.

Public Hall, Topsham.

The following awards have been made in this competition: (1) Messrs. Boddy & Dempster, London; (2) Mr. F. S. Swash, Newport, Mon.; (3) Mr. J. G. Russell, Newport, Mon.

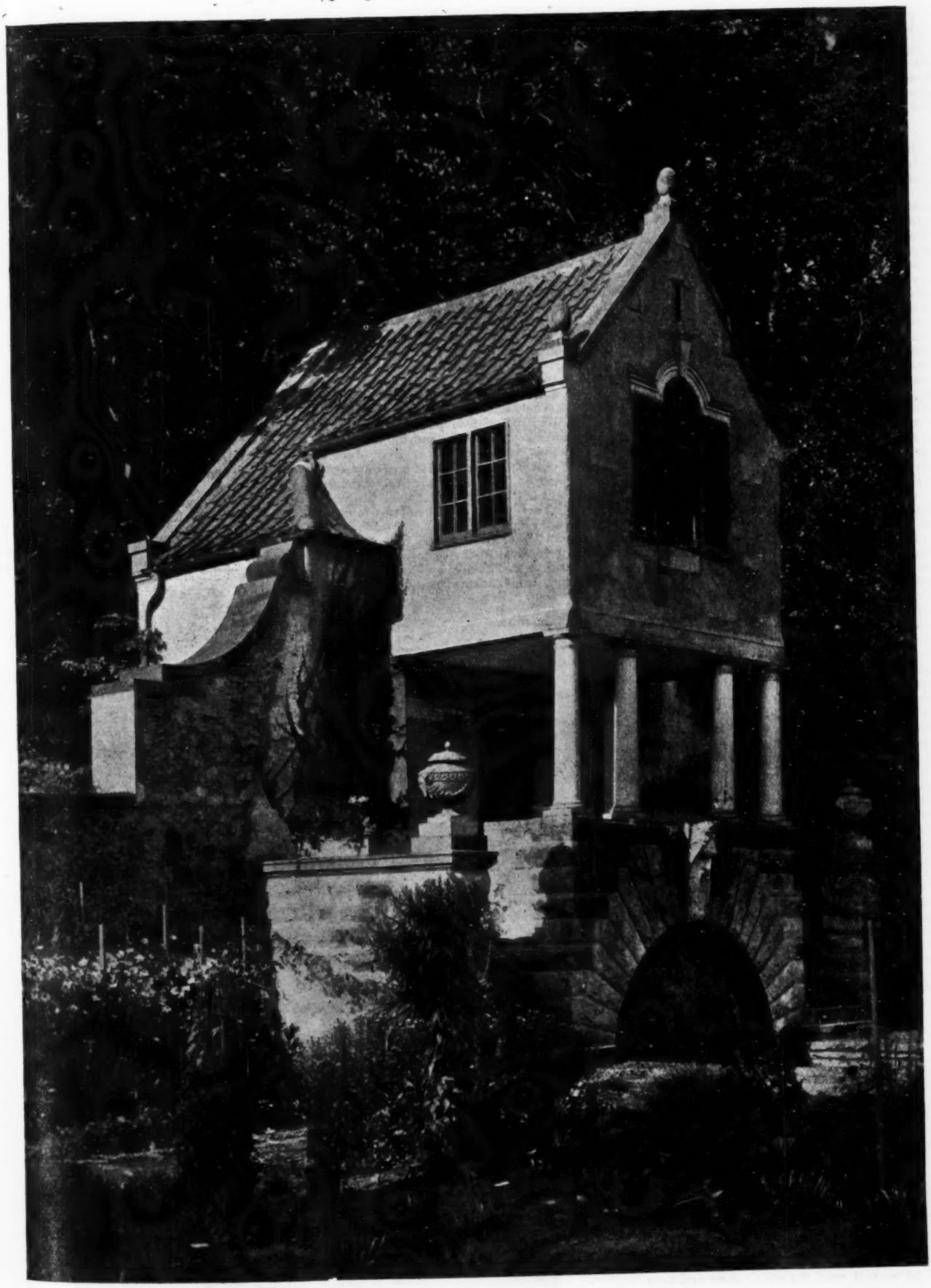
Housing, Diss.

We are asked to state that this competition closed on March 1 last.

Competitions Open.

	Particulars published in "Builder."	Sending in date.
Papers on subjects connected with Heating and Ventilating. Two prizes of £10 10s. and one of £5 5s. offered by the Institution of Heating and Ventilating Engineers	Dec. 25	May 1
Isolation Hospital for Infectious Diseases, Doncaster. Mr. T. R. Milburn, F.R.I.B.A., assessor. Premiums: £200, £100, and £75. Apply, Mr. W. Bagshaw, Town Clerk, Doncaster, to whom all questions must be addressed by March 8. £1 1s. deposit required	Jan. 29	May 10
Australian National War Memorial, Villers Bretonneux, France. Limited to Australians under special conditions. Apply Military Headquarters in capital city of each State, or High Commissioner's Office, Australia House, Strand, London. £2 2s. deposit required	Dec. 25	May 31
Royal Society of Arts Competitions for Industrial Designs. Apply Secretary, Royal Society of Arts	Jan. 1	June
(a) Dance Hall, (b) Restaurant, (c) Variety Entertainment Pavilion, (d) Shops, for Aberdeen Town Council. President of the Incorporation of Architects in Scotland, assessor. Apply to Mr. A. B. Gardner, Director of Housing, Town House, Aberdeen	Feb. 26	June 14
Elementary School, Oldbury, to be erected in Bristnall Hall-lane, Warley, Worcs., for the U.D.C. Mr. W. S. Skinner, F.R.I.B.A., assessor. Particulars of Mr. Arthur Culwick, Clerk to Council, Oldbury. Deposit £2 2s.	Mar. 12	May 21
Incorporated Architects in Scotland: (1) Rowand Anderson Medal and £100: City Art Gallery and Museum; (2) Rutland Prize (£50) for Study of Materials and Construction; (3) Prize (£10 to £15) for 3rd year Students in Scotland; (4) Maintenance Scholarship, £50 per annum for 3 years. Apply Secretary of the Incorporation, 15, Rutland-square, Edinburgh	Nov. 6	—
Royal National Eisteddfod of Wales, Swansea, Competitions: (1) National Parliament House of Wales (Prize, £100); (2) Street Façade to a Large Stores (Prize, £25); (3) Set of Measured Drawings of Architecture (Prize, £25). Apply for programme to publishers, Messrs. Morgan & Higgs, Heathfield-street, Swansea (1s. 2d. post paid). Mr. Arthur Keen, F.R.I.B.A., Assessor	Nov. 6	July 15

* Competitions when "warned" or vetoed by the R.I.B.A. are starred.



From the Exhibition of Garden Designs at the R.I.B.A.

Garden House, Mount Melville, St. Andrews.

The Late Paul Waterhouse, Architect.

M

CORRESPONDENCE

[While we are glad to publish letters on professional and other matters of interest to our readers, it must be understood that we do not necessarily endorse the remarks of correspondents, who will oblige us if they will express their views as briefly as possible.]

The Position of the Architect.

Sir,—I have read with great interest the letter by "Absolvi Meam Animam" on "The Position of the Architect," in your issue of April 9. It is to be hoped that the points which he raises will be dealt with in some definite official manner. Among other minor causes which lead to a leakage of work from qualified architects might be mentioned the following:—County Education Authorities employing clerks of works to carry out additions and extensions to schools; infirmaries and hospitals employing clerks of works in a similar manner; churches and business concerns employing building firms and craftsmen direct to add to and decorate their buildings; retired Civil and Municipal servants with a pension starting business in the same town as they were engaged in as public servants, thus gaining an advantage by their former official connection. Such cases have been greatly multiplied since the war, and it certainly seems unjustifiable that practising architects should be called upon, as tax and rate payers, to pay the pensions of men who are competing against them. The profession naturally wishes to avoid any form of trade-union methods which might give incompetent men in the profession (even if possessing many so-called degrees) an undue preference, but in these days, when it requires so much hard study and laborious research to qualify for the profession, it is to be desired that trained men should not be handicapped by irregular practices which could easily be prevented by united action on the part of the profession. Aide toi le ciel t'aidera.

Church Union in Scotland.

Sir,—The Church Property Act of May, 1925, marked another stage on the road to church union in Scotland. Before taking over the churches from the heritors it was decreed that they must be put into thorough repair. Each presbytery had to appoint an architect to report on the repairs necessary on all churches within their presbytery. Sessions and incumbents took little interest in these appointments and in many cases men of no ecclesiastical experience have been elected to these posts. I know of one case where a sanitary inspector has been given a large and important presbytery to deal with.

If these reports are to be examined by qualified men who are acting for the heritors, good and well, but the danger is that the work of repairs and alterations will be carried out by the architects, or so-called architects, who have reported on the condition of the churches, without supervision. We know from bitter experience that such appointments have a way of becoming permanent, and it will be found that pre-Reformation churches will be mishandled by men who have neither the qualifications nor experience for dealing with such work. We have seen the result of employing diocesan surveyors all over the country during the Victorian era, and it is to be hoped that this work in Scotland will not be allowed to fall into the hands of unqualified men, who may destroy the charm and value of our old churches by carrying out all sorts of incongruous additions and alterations having no relation either in design or detail to the character of the original work.

This is a real danger, the more especially as we are living in an age which cares nothing for sound material or scholarly treatment. Few churches in Scotland to-day are willing to spend the money necessary to do any architectural or art work as it ought to be done. Do not let us wait until the evil is done and then deplore it as usual.

De Mal en Pis.

Height of Doors.

Sir,—Your contributor, Mr. Gunn, makes a good point about the height of mass production doors. I have often asked manufacturers' representatives why the height should vary with the width and have never found one to explain it. The figures in any case bear no kind o ratio to each other and I have no doubt that many, like myself, have turned down mass production doors on various occasions for this reason alone. Why should not one height be adopted for all ordinary widths?

G. Reavell.

Alnwick.

BOOK REVIEW

Modern English Houses and Interiors. Edited by C. H. James and F. R. Yerbury. (London: Ernest Benn, Ltd.) Price 30s. net.

This book contains numerous illustrations of the work of architects well known for the excellence of their domestic designs. The illustrations are well done and consist of various views from photographs of the houses, both exteriors and interiors, also garden views, and details of the entrance doorways and fireplaces. Many pages are devoted to the plans, and in some instances whole sheets of working drawings are given. All appear to be post-war houses, for they show many economies and the installation of numerous labour-saving devices. Judging from the predominating illustrations, the cottage type appears to have given way to the Georgian model, which looks very satisfactory, with its well-placed and well-proportioned windows and simple roofs, a feature only being made of the entrance. Perhaps this simple Georgian treatment is preferable to the cottage or farmhouse type, on which much effort appeared to be spent in creating quaint features, often not the natural outcome of the plan. The roofs were also frequently cut up, which meant more repairs than would be involved in the simpler ones. Glancing at the interiors, simplicity appears to reign; the rooms have much less furniture than formerly, and what there is is well placed, and chosen with discrimination. Antique furniture still appears to have a strong hold. The houses vary in size from those containing a living-room and study, with three bedrooms, to those of much more pretentious character. Many are cleverly designed on other than Georgian lines. It would be difficult and unfair to mention any individual work, so many are of a high standard. In spite of the numerous works of this character, the volume is welcome on account of its thoroughness and the excellence of the selection.

Books Received.

How to Build a Small Two-manual Chamber Pipe Organ.—By H. F. Milne. (London: Office of *Musical Opinion*.) Price 7s. 6d. net.

English Rooms and Their Decoration at a Glance. Vol. II. By Charles H. Hayward. (London: 9, Queen Anne's Gate, Westminster.) Price 5s. net.

Westminster Abbey Re-examined. By W. R. Lethaby. (London: Gerald Duckworth & Co., Ltd.) Price 21s. net.

Old Masters and Modern Art. By Sir Charles Holmes. (London: G. Bell & Sons, Ltd.) Price 25s. net.

The Chemistry of Drying Oils. By R. S. Morrell and H. R. Wood. (London: Ernest Benn, Ltd.) Price 21s. net.

Dutch Architecture of the Twentieth Century. Edited by J. P. Mieras and F. R. Yerbury. (London: Ernest Benn, Ltd.) Price 32s. 6d. net.

The Russell School, Ballards, Addington, Surrey: The Chapel.

Sir Aston Webb PP.R.A., & Son, Architects.

UGLINESS OF ENGINEERING STRUCTURES

In the course of a paper on this subject, read before the Society of Engineers (Inc.), on Monday last, Mr. H. B. Creswell, F.R.I.B.A., said that, as examples of beautiful engineering structures, might be suitably instanced the ocean-going wooden sailing ship, the masonry lighthouse built on a rock in the open sea, and a great masonry barrage or reservoir dam. It would be noticed that there were certain characteristics common to all these examples. First, we observed that each was fabricated of materials directly derived from an origin in nature, that the characteristic qualities of those materials were realisable by everyone, and that they were so applied as to awaken a sense of having been shaped and fitted together by the hand of man. Secondly, we found the materials to be of complete integrity and used with no other purpose than that of making the best use of them, so that the beholder received an impression of the admirable characteristics of the materials whose qualities—weight, hardness, toughness, elasticity and rigidity—were glorified in the structure. Thirdly, we observed that the form of each of these structures was in every part exactly designed to resist the forces of nature so that the character of those forces and of the reactions opposed to them were expressed in its form and perceived by the beholder. Fourthly, we found, as resulting from or contributory to the above, that each of these structures displayed the nicest efficiency and economy of means to ends; and, fifthly, we noticed that each has a dignified use and purpose, and in no case one that was ignoble or trivial.

(1) A steel ship with iron rigging alienated our sympathy in a degree that made her seem a substitution for a wooden ship—an imitation. A steel hull—although when we noticed it we experienced a certain dissatisfaction or diminution of the pleasure we had in contemplating the ship—did not interfere greatly with our pleasure in a ship's hull, partly because we had a dim sense of the nature of steel plates so used, and the bending of them, but chiefly because the form of the hull was equally appropriate, whether of steel or wood. It was quite a different matter with the steel masts and spars and wire stays, halliards and cables. The form of them was not expressive of iron; it had been copied from the form found best by long experience in the use of wood and cordage. If the top-hamper of sailing ships had always been of iron—no wood being available—its form would be very different from that now employed in such work. The remoteness of iron from a source in nature, the removal in its shaping from any acute sense we had of the labour of men's hands, made such rigging unintelligible to us. We had no sense of its elasticity, no consciousness of the give and take and balance of parts and efficiency of means to ends which our close intimacy—affection even—for the qualities of wood and hemp enabled us to dote on in a right wooden ship. Not only was the beholder cheated of the sense of the nature of the materials, but also of the sense of man's handiwork.

The Eddystone Lighthouse, built of cast-iron or rolled or stamped steel plates riveted to steel stancheons, would lose much of the appeal it made to our sense of its beauty. The author even questioned whether such a structure would have any beauty—whether, in fact, it would not strike the beholder as ugly. This loss of beauty was obvious, and the reason was that the substitution of steel plates for stone, of material of one kind for a material of a quite different kind, changed an erection which touched on perfection into a clumsy incompetence.

If we considered a dam—that of the Caban Reservoir near Rhayader, for instance—and imagined the masonry to have been replaced by armoured concrete, we were instantly aware of a great weakening in our sense of the beauty of the structure. This was partly due to our sympathy for masonry, but it was mainly due to the dam being no longer a structure of separate live units, the nature of which we understood, but a hulking monolith beyond sympathetic comprehension. Our sense of the dam was further confused by its form not being characteristic or expressive of the qualities of armoured concrete, but imitative of the form of a masonry dam; it was making an appeal to our sense of separate stones piled up to counterbalance by their dead weight the thrust of a mass of water, when it was nothing of the sort.

(2) Little need be said under this section, for it was common experience that the beauty of any structure was marred when the materials comprising it were inadequate in kind or quality or wrongly applied; and the reason was that all such defects or misapplications were degrees of imperfection or ugliness. This particular falling away from perfection was not readily to be instanced in engineering structures of importance and not therefore in ships, lighthouses, or dams. It was common enough in works having the character of architecture.

(3) The essence of the beauty possible to an engineering structure lay in its form; not in any abstract grace of form, but in the perfection with which the form was governed by and expressed the purpose of the structure. Such a form could exist only when the structure had been efficiently and economically designed, that was to say, when the best use had been made of the material in opposition to the natural forces to which the structure was opposed or was related. The beauty of the hull of a ship depended upon the suavity of the curves designed to frustrate the opposition of the water, upon its buoyancy, its steadfastness, its ability to yield to and yet master the waves that would capsize and swallow it. A lighthouse, too, such as the Eddystone, owed its beauty of form to the expressiveness of the slender shape and tapered curve designed to disperse the shock of the seas and cheat the wind.

A dam, too, such as the Caban, owed its beauty of form, also, to the expressiveness of the sweeping curve from base to crown which filled the beholder's mind with the sense of the nicety with which the forces of gravity, in weight of masonry and of water, had been opposed.

(4) If, as has been shown, the beauty of an engineering structure depended, among other conditions, upon the integrity and appropriate use of materials and nice adjustment of the form of the structure to its uses and the forces acting upon it, it followed that beauty could only be present in a work of engineering the design of which displayed high efficiency and economy of means to ends.

(5) It might seem a surprising thing that the use a structure served should have any bearing upon the sense of beauty which the beholder received when he recognised its perfection as a structure. There was no question, however, but that this was true not only of engineering structures but of works of architecture; and the fact showed us how little a perception of beauty owed to any gratification of the eye, and how much it depended upon associations in the mind. The author lately had the companionship of an eminent American architect and took him to view the old and new delights offered by Hampstead. When the two were passing Golders Green Crematorium, the author said to his companion, "Can all the resources of architecture enable anyone to design a crematorium chimney which will look beautiful?" The American architect took three seconds before he committed himself to his answer—"No." Architecture could not give dignity to a refuse destructor, a sewage farm, a gas works, and we knew how general the failure had been to make a pumping station a pleasant object. Architecture could, indeed, disguise the purpose of these structures, but such disguise was an abomination, a thing worse than any ugliness, for it offended the soul of the beholder, it outraged the human spirit. Among the scenes at Hampstead which called for admiration, Church Row was prominent—but what would our sensations be had that brick frontage of eighteenth-century town houses been built to camouflage a jam factory? Or let us consider a choice example of the art of the craft of building, and picture an oratory or chantry standing apart—a complete little stone building of fourteenth-century Gothic—pinnacled, carved, enriched with tracery and ball-flowered mouldings. How if we discovered it to be a stand for selling picture postcards and packets of milk chocolate so built to match the cathedral behind it? How if it should prove to be a public lavatory equipped with hair brushes instead of prayer books? In either case its intrinsic merit as an oratory would aggravate its offence, although there was no reason why a kiosk should not look pleasing if its design expressed its humble purpose.

Discussion.

Sir Francis Spring said that engineers were apt to neglect architectural features primarily because most of their work had to be justified commercially. He remembered making what he thought a fine abutment for the piers of a long bridge and being taken to task because of the waste. He had not since been guilty of much architecture, but three or four big structures had fallen to his lot. One of these had been the central office of a Port Authority. In that case he had started with bricks, not of good quality, and he had found not far away a quarry where stone setts for paving were produced. He had bought some millions of these setts cut to the dimensions he wanted, and had used them to face the brick walls of his building. This stone skin would last for ever, which the bricks certainly would not have done if exposed to the weather; but he doubted whether his conduct in covering the bricks with stone would have been approved by Mr. Creswell. As to the old wooden ship, this was beautiful, but ships were not built primarily to be looked at. Beauty had to be sacrificed to efficiency.

Mr. J. S. Wilson said the Caban dam and Eddystone Lighthouse had been cited as objects of beauty. They were examples where the requirements had governed the design. The Caban dam was a weir as well as a dam, and so had a straight horizontal course at the top. The water went over first a convex and then a concave curve, both designed by use. The stones on the surface of the dam were to prevent the water going over in a film. The most common type of dam was not used as a weir; there were wider possibilities of designing, and the engineer had to bring in the taste which might arouse the indignation of the architect with æsthetic views. The speaker then showed by diagrams how the thrust of the water was carried down into the base of a dam. The granite was used, he said, to only eight or ten per cent. of what it would carry. If the dam consisted of a face of stone supported by buttresses and flying buttresses there would be a more economical use of the material, but the effect would not be so fine.

Mr. Nicholas (G.W.R.) said the Eddystone lighthouse had been chosen as an example of beautiful work, but probably its strength was due to iron cramps between the stone courses. Regarded only as a piece of masonry the lighthouse would come down in the first storm, there not being enough batter at the bottom.

Mr. Powys said we had been trained to think old things beautiful—old houses, ships, bridges, cathedrals—and the sudden changes which had come in the nineteenth century and were still going on had brought new materials and new methods. To his mind steel ships were as beautiful as their predecessors; but not having in our minds the associations of the past we were not so ready to call them beautiful.

Mr. Lofting said beauty was something you could not arrive at by studying form and colour, but it grew in any structure in accordance with the straightforwardness, truthfulness and efficiency that the material was dealt with.

Mr. Stanier said that Mr. Creswell had ignored ferro-concrete, According to the trend of the lecture this material could not be used for architectural purposes; yet, according to architectural papers, ferro-concrete was the finest thing. It was being used for cathedrals. A thing could not be beautiful unless its producer had loved it. Those works in timber that Mr. Creswell had praised had been built by men who loved their work, but the engineer had to build as economically and efficiently as possible, and when he had done it he hated himself and his work.

OSTIA AND THE ORIGIN OF THE MODERN FLAT

Reading a paper on this subject before the Liverpool Architectural Society, Mr. F. O. Lawrence, B.Arch., A.R.I.B.A., said Ostia, which is still in the process of excavation, offered a new if apparently unexciting subject for study. But it was far from being a dull subject, because the discoveries at Ostia had added a new chapter to our knowledge of the Roman world, and in particular were throwing new light on the commercial buildings and private dwellings of the Romans. As far as we could judge from the excavated portion, the city consisted chiefly of commercial buildings and private dwellings, and the temples and public buildings had, so far, proved to be the least interesting part of its composition. In many parts of Italy the public buildings and temples could be studied to better advantage, but no other places gave so many examples of the private and commercial buildings of this period. Ostia held the same position of importance to the Roman world as Liverpool does to England. All the great shipping corporations had their headquarters there and the docks and great storehouses were comparable with those of our own city to-day.

Judging from the earliest remains which had been found, Prof. Vagliere placed the foundation of Ostia, the ancient port of Rome, at about the third century B.C. Not until 217 B.C., during the second Punic war, was it mentioned as a naval base and harbour of Rome. Stone walling which could definitely be assigned to the Republican period was fairly common, but in most cases it had been reused as foundations for later buildings. That the earliest city covered quite a small area had been recently shown by Prof. Calza, who is now in charge of the excavations, and had lately discovered its complete circuit. Several buildings still remain of the Augustan period, among the most notable of them being the theatre.

Ostia stood on the left bank of the Tiber. Claudius built a harbour on the right bank and connected it with the river by a canal which formed an island of the land this cut off. Trajan further developed this scheme and built another harbour. Domitian, who became Emperor in A.D. 79, seemed to have begun the rebuilding of Ostia on the higher level on which it now stands; but the greater part of the work belonged to the period of Hadrian and the Antonines, the second century A.D. Afterwards, as the sea gradually receded and the river changed its course, Ostia lost its importance, and Porto, as the new port was called, which grew up on the right bank of the river, had already, in the fifth century, superseded it. In the sixth century, Ostia was described as being far from the banks of the river and undefended by walls, and the Via Ostiensis, the great road to Rome, entirely neglected; while ships still came into Porto and discharged their cargoes into barges to be towed up to Rome by oxen. The incursion of pirates further assisted the destruction of Ostia, which gradually became a stone quarry, from which marble was afterwards transported for the building of the cathedrals of Pisa and Orvieto.

In the middle ages the still inhabited village of Ostia sprang up not far from the old port; and in the fifteenth century, the fine castle which still stands was built by Guiliano da Sangallo on a bend of the river. After a great flood in 1557, the river again changed its course, and was now some distance away. The modern village stands three miles from the sea, but a new town is springing up on the coast and rapidly becoming a popular seaside resort. The advent of an electric railway which had just been completed would help this development and would make the excavations more easily accessible to visitors. A fee of 5 lire had also just been imposed for admission and this no doubt would attract many tourists.

The area at present excavated, which was only a small part of the whole city, lay between the main road to Rome and the river. If we approached Ostia by this road, our way to the city gate lay through the cemetery. Inside the gate, after passing an area of smaller domestic buildings, we come to the baths, which are chiefly notable for a very fine black and white mosaic on a large scale. Behind the baths was the barracks of the "Vigiles." Numerous scratchings on the walls of this building are of interest. One name is scratched several times outside the main entrance, and it is surmised that one of the garrison failed to return before the gates were shut and spent the night outside, whiling away the time scratching his name on the wall. Inside are to be found scratchings referring to sergeant-majors, which make it quite clear that sergeant-majors were no more popular then than they were during the late war.

Further on we passed the open-air theatre, and behind the Piazza delle Corporazioni which enclosed the temple of Ceres. Here the important shipping firms had their offices, and outside each shop or office was a mosaic in black and white depicting their particular line of business, and in some cases giving the name of the firm. This piazza was formerly thought to be the forum. We then passed an area of shops and houses, and two very large warehouses. It was interesting to note in these warehouses that the ground floor was raised about 9 in. from the ground, so that air circulated freely underneath, and the floors were always dry. Grain was probably stored here. Beyond this we come to the forum and the real centre of the town. Most of the buildings here were constructed during the life of Hadrian, but the site of the earliest city lay within this area. The forum had only recently been identified and was still in the early stages of excavation. It contained a temple dedicated to Augustus and Rome. Facing the forum across the main road was the Capitol and temple of Jupiter. This was probably the finest architectural feature of the city and fragments of practically a complete entablature compared favourably in style and workmanship with the best work of this period. Behind this temple, but slightly off its main axis, a broad arcaded street of shops runs to the river. It begins at the temple end with a portico of brick piers, and probably originally terminated at the river end in the same way, but here the river had changed its course and encroached on the city, and it was not quite clear what happened at this end. It was, however, practically certain that a broad roadway ran parallel to the river bank and that there were quays for loading and unloading barges which plied the river between Ostia and Rome.

To the left of this Via del Tempio and separated from it by a narrow unpaved passage was a large open market with a covered arcade all round, off which open large store-rooms. A concrete vault covered these rooms, and staircases at two angles showed that the building was at least another story high. Adjoining this, on the west, was an exactly similar market on a smaller scale. This was bounded again on the west by a row of shops opening on to the Via Epagathiana, called after a warehouse recently discovered on this street in which was found a tablet bearing the inscription "Horrea Epagathiana et Epaphroditiana. The street was only partly excavated, but the warehouse had been cleared and was being reconstructed.

Having described several small types of building encountered, the lecturer referred to the Insula dei Dipinti, a block of apartment dwellings which was an example typical of Ostia. It was L-shaped in plan, containing three houses of which the largest, forming the base of the L, and known as the Casa di Giove e Ganimede, probably belonged to the owner of the block and contained a shop. The other two are similar in plan. At the back they overlooked an open space which was probably a garden, as no paving had been found there. It took the place of the peristyle of the "domus," and corresponded to the "cortili of the later palazzi." The walls throughout the ground floor are concrete with a brick facing and about 60 cms. thick. The rooms are vaulted in concrete at a height of 8 metres, and except in the more important rooms there is a mezzanine floor at a height of 4 metres. The remains of staircases proved there was a third floor, and as the law laid down a height limit of 20 metres for private building, we could imagine this block to have been four or five stories high. The thickness of the walls was a further indication that it was of considerable height. The balcony at the first floor is formed by the extension of the vault beyond the outside wall about 1 metre and arching back. The main entrances are enriched with pilasters and pediments built in hard-faced red brick with a very thin joint; the remainder of the façade was faced with bricks varying in colour and with a thicker joint, and was most probably finished in plaster. Internally the walls were finished with plaster and painted, but the work never reached such a high standard of excellence as was found at Pompeii. The designs were generally formal, and crude attempts at perspective were occasionally introduced; the colours being brilliant and generally well preserved. The floors of the principal rooms are finished with mosaic in black and white geometrical patterns. Mica was used for the windows probably in a wooden frame, as no trace of marble or metal had been found.

Ostia, said the lecturer, considerably extended our knowledge of the Roman habitation. In the Roman world there were two types of dwelling, the "domus" as seen at Pompeii, which is well known, and generally accepted as being typical of the Roman dwelling, and the "Insula" of Ostia. Ostia must have been an important and typically Roman city, and the type of dwelling found there must have been modelled on the Roman type, and must take precedence over the "domus" of Pompeii as being typical of the Roman dwelling of the second century. The theory that foreign influence determined the arrangement of the Ostian house could be disregarded when we considered its close connection with Rome. Only this type of dwelling would permit of the population of Rome, which could not have been less than a million inhabitants, being housed in the comparatively small area enclosed by the ancient walls. In Rome itself there was evidence of this at S. Giovanni et Pailo, and in the city wall at S. Lorenzo, where walls of Roman houses showing windows similar to those of Ostia had been incorporated in the later buildings.

MEETINGS

Friday, *April* 16.

Royal Society of Arts.— Lieut.-Gen. Sir W. T Furse on "The Work of the Imperial Institute." At 18, John-street, W.C.2. 4.30 p.m.

Saturday, *April* 17.

Institution of Sanitary Engineers.—Visit to the Building Trades Exhibition. At Olympia.

Monday, *April* 19.

Royal Society of Arts.—Mr. C. Reed Peers on "Ornament in Britain." At 18, John-street, W.C.2. 8 p.m.

Royal Institute of British Architects.—Mr. Gilbert Bayes and Mr. Laurence A. Turner on "The Co-operation of Architect and Craftsman." 8 p.m.

Tuesday, *April* 20.

Builders' Clerks' Benevolent Institution.—Annual Dinner. At the Holborn Restaurant, W.C.2. 6.30 p.m.

Institution of Structural Engineers.—Visit to the Building Trades Exhibition. At Olympia.

Wednesday, *April* 21.

Building Exhibition.—Mr. F. Coleman on "Substance, Form and Colour in Concrete." At Olympia. 3 p.m.

Thursday, *April* 22.

Roads Improvement Association.—Annual General Meeting. 12, Great George-street Westminster, S.W.1. 5 p.m.

London Master Builders' Association.—Visit to the Building Trades Exhibition. At Olympia.

INSTITUTION OF STRUCTURAL ENGINEERS

ANNUAL DINNER.

The annual dinner of the Institution of Structural Engineers was held on Monday at the Piccadilly Hotel, the President, Sir Charles T. Ruthen, being in the chair.

Responding to the toast of "Our Country and Empire," proposed by Mr. H. J. Deane, Sir Alfred Mond, M.P., said when he was Minister of Health the price of cottages was reduced from £1,000 to £400 in six months. This country, he continued, required the combination of the engineer and the chemist for the solution of its difficulties. Politicians could not create success unless the engineer and the business man built up the prosperity of the country. Governments could hinder or they could help, but could not create. The country, therefore, could only build up its prosperity on new inventions and research. The solution of the coal problem was not legislation but invention. The chemist and the engineer would together solve the problem of coal distillation and would be the real saviours of the mining industry.

The toast of "The Learned Professions and the Guests" was given by Mr. J. Mitchell Moncrieff and responded to by Sir William Ellis (President of the Institution of Civil Engineers), Mr. Justice Eve, and Mr. H. G. Wells.

Mr. Ellis said they had not yet succeeded in making engineering a closed profession; that would be a matter of time, and the learned societies were doing all they could to bring it about.

Mr. Justice Eve said a practice had arisen of indiscriminately criticising modern building, and comparing it with the work of their forefathers to the great disparagement of what was done to-day. He had heard it suggested that when Regent-street was completed it would be a thoroughfare full of poor architecture and shoddy materials. At the risk of standing self-condemned as a person of perverted taste he would like to say that he dissented from that general criticism, because in his opinion there could be no just comparison unless all the factors were taken into account. For instance, the extraordinary increase in site values necessitated an increase in the rent-producing powers of the buildings; far more light was required for showrooms; far more window space was demanded than was ever contemplated a few years ago; improved conditions for the comfort of the workpeople were necessary; and there was an enormous increase in the cost of building materials and labour. All those elements should be taken into account when comparing the structural achievements of this and previous generations. And who was prepared to assert with confidence that their forefathers would have done better if they had laboured under the restrictions and conditions which confronted present-day designers?

The toast of "The Institution and its President" was proposed by Mr. G. Topham Forrest (Architect to the London County Council) and responded to by the President.

PRODUCTION OF STRUCTURAL STEEL SECTIONS.

Mr. Ewart S. Andrews, B.Sc., reading a paper on this subject before the Institution of Structural Engineers last week, said that when the historians of a thousand years hence came to the review of the progress of civilisation they would probably regard as of fundamental importance during the past fifty years the amazing developments which had taken place in the production and development of steel. The romance of steel was being unfolded before our eyes, yet few of us realised how important and far-reaching were the effects of this upon human progress. In the play called "Milestones" there were acts in three periods and three generations, in the first of which the younger generation of a shipbuilding firm met great opposition in its desire to turn to iron ships from wooden. In the next act we were at the stage at which the iron ship had proved to be a success, and in the last act one of the new generation suggested that steel should be used instead of iron, and the arguments used against him by his father-in-law were almost identically the same as those against which the latter had had to contend when he was advocating iron ships in place of wooden ones.

In construction we had seen the development of wrought-iron to replace cast iron; the development of wrought-iron sections proceeded quite well, and in many buildings in London put up in the seventies and eighties we commonly came across this wrought-iron construction. At that time it was suggested that since mild steel was about 50 per cent. stronger than wrought-iron it should be used in place of it, but it was freely and confidently prophesied by the wiseacres of the time that the new metal would not last, and that wrought-iron would still remain the best and most economical material—at the present time the manufacture of wrought-iron has practically ceased. Steel was now chiefly produced by the "open-hearth" process. In this process pig or molten iron mixed with steel scrap was melted in an open-hearth furnace by exposure to the direct action of the flame in a regenerative gas-fired furnace and the resultant bath then had its impurities removed by the addition of iron ore until it was converted into fluid steel, whereas in the older Bessemer process air was blown through molten pig iron in a "converter." The fluid steel produced by either process was cast into ingots for subsequent treatment.

Open-hearth steel was of two varieties known as "acid" and "basic," depending upon the lining of the furnace; in the acid process the lining was of acid material such as sand or silica, and in the basic process a basic lining such as dolomite lime-stone was employed, calcined lime being added with the charge. In the acid process the ore must be comparatively free from sulphur and phosphorous; in the basic process these impurities were to a large extent eliminated, hence basic steel was usually lower in sulphur and phosphorous than acid steel.

Structural steel contained up to 0.25 per cent. of carbon, small quantities of manganese and silicon, and not more than 0.06 per cent. of phosphorus and sulphur; in the manufacture of steel great care had to be exercised to keep these relatively microscopic amounts of ingredients within close limits because the physical properties of steel were very quickly affected by small variations in the chemical constituents. In modern practice this was under complete control because with the open-hearth process chemical tests could be made of samples of the steel taken from the furnace, and by addition of small quantities of requisite materials as the charge was poured into the ladle the analysis could be brought up to the exact results required.

The very desirable quality of ductility or lack of brittleness was ensured by the purity of the steel, and was tested mechanically in the steel after rolling by cold bend tests, and by a minimum percentage elongation on fracture by tension. Some authorities were of opinion that the percentage reduction of area at fracture was a more reliable test of ductility than the elongation test, and it was possible that at some future date the standard ductility test would be for reduction in area.

Having described the rolling process in detail, and having given some brief notes on rolling mills, the speaker said with regard to the future there appeared to be one direction in which we might confidently expect to see some advance in the next twenty years; he referred to the extension to structural sections of rust-resisting steels. If there was one thing that gave us any feeling of uncertainty in regard to steel construction it was on account of the rusting tendency of ordinary steel—a tendency more marked in mild steel than in cast-iron or wrought-iron. Rust-resisting or "stainless" steel had already made remarkable progress in all kinds of domestic articles, and great advances had been made since this remarkable steel was first introduced. The steel was at first rather brittle, but that difficulty had since been removed, and a rust-resisting steel could now be produced which would comply with the usual specification as regards ductility. The only difficulty at the moment was that of cost, but the cost of special steels would become lower as they were produced more extensively and for structural purposes we could afford to pay somewhat more for rustless material, because if we had not to consider the possibilities of rusting we could safely increase our working stresses to some extent.

EXHIBITION NOTES

GARDEN DESIGN AT THE INSTITUTE.

The very interesting exhibition of garden design at the Institute is proof enough of the widespread activity manifested to-day in the making of beautiful gardens. The variety and charm which has been developed round many of Sir Edwin Lutyens's country houses has no doubt had a large influence in bringing both clients and architects to realise the great value of good garden design as a setting for a country home, but garden designs on a large scale, recalling some of the glories of our great English gardens, have been carried out for many years now by Sir Reginald Blomfield and others. The exhibition of executed modern designs is a large one, and it is supplemented by a group of London gardens illustrated by photographs and drawings and a considerable number of measured drawings and photographs of Italian gardens. Obviously photography can do little to convey to us the real charm of the gardens, but a few good drawings help to take off something of the dull effect of so large a collection of photographs. Mr. Harold Stabler's fine faience pots, filled with great flowering shrubs, add much to the effect of the galleries.

Prominent in the meeting-room are some good subjects by the late Paul Waterhouse, a pleasant garden house illustrated by a fine photograph, and a good water-colour of Island Buildings at the same place, Mount Melville, St. Andrews. One of the noticeable exhibits is a beautiful water-colour of St. Catherine Court, Somerset, by Messrs. Baillie Scott and Beresford. There is a good collection of things by the President, Mr. Guy Dawber, as one would expect. Mr. Robert Atkinson is represented by some fine water-colour drawings of Cherkley and the Brighton work. Some good coloured drawings by Mr. Geo. Sherringham, and a group of drawings of Ffynne, Pembroke, by F. Inigo Thomas, give relief from the photographs. A number of interesting subjects by Messrs. Falconer Baker and Campbell, excellent pavilions and gardens by Mr. Oswald Milne, a telling pavilion and water tank at Shipton Court, Oxon, by Mr. H. G. Cherry, several striking subjects by Sir Reginald Blomfield, Mr. Oliver Hill, Messrs. Belcher and Macartney, Sir John Burnet, Sir Edwin Lutyens, Messrs. Braddell and Deane, and Kieffer and Fleming are amongst the noticeable exhibits. A large number of prints from published works are lent by Messrs. Batsford.

PATERSON'S GALLERY.

The exhibition of paintings by Mr. P. H. Padwick at the Paterson's gallery in Bond-street will have appealed strongly to those who value the colour and decorative value of pictures as a matter of prime importance. The sober colouring and the flat treatment of paint contribute much to the decorative result, and it is a pleasure to see that we have still amongst us, in this restless, fussy age, artists who have the courage and ability to paint such sober, restful work. Two or three of the larger landscapes are notable for their breadth and luminosity, but all the works reflect a sincere and able outlook.

GARDENS.

On Wednesday afternoon last Mr. F. Inigo Thomas read a paper on this subject at the R.I.B.A. He said he could not picture to himself a garden, in its true sense, divorced from the building to which it belonged. There was something lacking in the County Council garden in a London park. One ought, of course, to be thankful that it might afford pleasure to so many folk, but somehow that was not very satisfying. The fact was, we all had a stronger individual than civic sense, and we were conscious that what was public property was often the property of none. Gardens, in their right place round the house of the owner, sprang into life and being; and they grew to bear the impress of loving care and formed the background of many fond memories. They should, of course, be proportioned to the size of the house, which would probably connote the length of purse and the leisure of the owner. There was just as much sense of fitness in the cottager's plot as there was in the broader schemes of the country magnate.

So, to his thinking, a home should be an architectural conception of which the garden really formed a part. The several enclosures were the open-air apartments in the making, and they should be studied from several points of view. Sun, shelter, and shade, both for human and vegetable occupants, should be the first consideration; then the prospect from each individual window; and, lastly, the views of the house from the gardens and effects to be obtained in the grounds themselves. All purely æsthetic considerations should be put to the simple test of picture composition, and if the massing of the ultimate effect was not felt likely to be good, steps should be taken to correct it.

The means at hand for obtaining results were manifold. There was good spacing, change of level, and enclosure either by living things or masonry. There was massing of trees for big shadows and broad expanse of turf for sunlight, and there were flowers in beds, borders, and walls for colour. Let the guiding principle be to create, with a reasonable element of time, such foregrounds, middle distances, and backgrounds as would delight a painter. If they did this he thought they would have succeeded. He said "succeeded," but perhaps one should rather say that to prescribe them was all the architect was able to do. For to design the garden was one thing, and to garden it so as to obtain the desired effect was another. The latter naturally fell to the occupants to do throughout the season, and did not come to fruition till long after the designer was gone and forgotten. Without the guiding mind the element of time might be useless or worse, but all designers could do was to throw their bread upon the waters.

Architects should, of course, be fairly competent painters and something of sculptors. He had no doubt that in the present day they were all of them both. He seemed to recall a time when members of the Institute and even Academicians acquired merit in borrowed Walcot plumes at Burlington House, but doubtless such things were of the past, and all now, being masters of the brush, would agree with his view that the outdoor portion of an architectural scheme was primarily a painter's problem. If that was conceded, the artist should surely be left to select the materials for his picture, and among painters the biggest men had generally been content with very few pigments. Now, the pigments of the garden designer were trees and shrubs, flowers and creepers, and of all of these the nurseryman's catalogue contained a terrible variety. He doubted whether for the painter the colourman's list had half such terrors. But, then, no sitter insisted on setting the painter's palette—a situation from which the garden designer did not so easily escape!

Since these remarks were mainly addressed to the students, it might not be out of place to refer to the practical methods of carrying such works into execution. After seeing the place the first thing he did was to make a series of sketch forecasts in oil of the ultimate effect. The impatient client invariably broke in on these before they were finished, and one of two things occurred. If his enthusiasm was great and his bank balance small, he would hurry him (the speaker) on to the next stage. If, on the other hand, he was wealthy, he would probably decide at once that the suggestions went well beyond his means, and it was useless to proceed. Hence these forecasts never got carried very far.

The next stage was a careful survey, and then a drawing to small scale of the whole scheme. This was made solely for discussion, and he insisted on being allowed to finish it as he thought it ought to be. It was mounted on a stretcher and framed for hanging in their house as a guide for the next generation in carrying on the scheme which perhaps the present would leave uncompleted. In the past such schemes were seldom finished under one owner. In course of discussion this might be, and generally was, departed from in many respects. From that stage onwards he thought the drawings were much the same as for ordinary building, but he had gone into this point rather more fully in a little book, "Keystones of Building." This outside work was generally done with approximate estimates based on a schedule and measured as the work proceeded, a system that proved more elastic than contract.

Having given a short historical survey of the development of garden making in England, the speaker, coming to modern times, said architectural study soon made plain what was wrong with our buildings. The landscape method was denying them their proper surroundings. He found this view was strongly shared by Mr. Reginald Blomfield, as he then was, and they set to work on "The Formal Garden in England" in the hope of effecting reform. At that time only scattered knowledge existed of surviving remains of the older method, so a good deal of travelling about the country was entailed in finding them. By 1892 the book was published and the storm of criticism it raised in the horticulturist camp was remarkable. The later phase of the landscape period devoted much attention to the "specimen" tree. Given a long enough name or exotic appearance, it inevitably invaded the precincts and claimed a position it should never have had.

Forest trees in the garden proper should be a matter of careful consideration. If they already existed on the ground to be treated we should be careful how we eliminated them and scheme so as to keep the best. By the best he did not necessarily mean the most symmetrical. A distorted tree was often best for shade and its masses might fall in the right places for picture making. On fresh, unplanted ground they should, broadly speaking, be kept beyond the walls, as the formation of background was their main function, and shade they would naturally give as the sun went round.

There had been suggestions of late to border the new arterial roads with a varied assortment of trees. But surely what was required was a regiment of trees, not a rabble—sections of beech, sections of elm, and so forth, according to the nature of the soil the road was traversing. By any other method no uniformity of size or breadth of colour effect was possible. The Araucaria, for instance, was only in place at Kew. The fine approach to the town of Henley from Nettlebed was one which, he thought, we might well take as a precedent for the new roads.

He had sometimes thought that in English gardens more might have been made of falling water than was done in the past. Running streams were sometimes introduced as at Beal in Scotland, Littlecote and elsewhere with moderate effect, but more pains were generally taken with sheets of placid water as at Melbourne, or on a grander scale as at Hampton Court and Wrest. At Studley Royal a scheme of canals and pools conceived on a generous scale, but with no particular reference to any building, was made to fill a valley of great natural beauty. It was one of the last efforts of the old dying formalism and seemed a good example of what to avoid in similar circumstances and surroundings. Certainly the valley untouched would have been a more suitable approach to the ruins of the abbey.

In a new garden the texture of any walling there might be is a point of importance, and it should not have to wait for creepers before it was interesting.

Having shown and commented on slides of a number of Italian gardens, the speaker returned to general principles and said it had sometimes struck him that a certain relation existed between loggias or cloisters and groves or avenues. The first marked the passing from covered blocks to open air, and the second from enclosures to open country. To a certain degree, too, they depended on the same characteristics in massing. When planning for architectural effect in a building we naturally strove to obtain a certain alternation of light and shade. Glimpses one got of the courts in foreign towns were rich in this quality, and it was one that admitted of infinite variety when introduced in gardens and groves.

Prizes and Studentships, 1926–1927.

We have received a copy of the R.I.B.A. Prizes and Studentships pamphlet for 1926-1927, which contains full information upon the various Prizes and Studentships, totalling in value nearly £2,000, together with the detailed programmes for the competitions. In the case of the Godwin Bursary and Wimperis Bequest, the attention of competitors is drawn to the fact that the value of the prize has been increased from £130 to £250. The pamphlet also gives particulars of the London County Council Scholarships in Architecture and Building Construction. Additional copies of the pamphlet are obtainable at the R.I.B.A., price 1s., exclusive of postage.

The Royal Gold Medal for Architecture.

Intimation has just been received that His Majesty the King has approved the award of the Royal Gold Medal to Professor Ragnar Ostberg (Honorary Corresponding Member of the R.I.B.A.), of Stockholm, in recognition of the merit of his executed work. The Medal will be presented to Professor Ragnar Ostberg at the banquet of the R.I.B.A., on June 17.

Cornwall Archæological Discoveries.

Two prehistoric monuments have been discovered on Bodmin Moor by the Rev. H. H. Breton, vicar of Morwenstow, and a West Country archæologist. One, situated in the parish of Davidstow, consists of the remains of a barrow, 170 ft. long and 60 ft. wide, with a cromlech at the burial chamber end. On the capstone, a single block of igneous rock, measuring 18 ft. by 7 ft., are 18 cup-markings. The other discovery is a group of three round barrows, surrounded by a well-defined moat filled with water.

Archæological Discovery at Berwick.

Employees of the Office of Works, engaged in restoration work on Hunsdon's Mount, on the old Elizabethan Walls at Berwick, have laid bare an old gateway which is believed to have been a water gate or port leading from the river to the grounds of the Governor's house, which still stands just behind the Mount. The gate had been built up with rough stone while the original stonework of the walls is in ashlar or bond formation. The doorway, which is over 3 ft. wide, has two finely-tooled corbels supporting the lintel.

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ILLUSTRATIONS

West Bromwich Permanent Building Society's Premises.

We illustrate this week the winning design in this competition, by Messrs. Surman & Benslyn, AA.R.I.B.A. Particulars of the award are given under Competition News, page 62 .

Acton Sports Pavilion.

This building, which cost approximately £3,000, is for the women members of the Liverpool Victoria Friendly Society's Sports Club. Provision is made for a large club room and for dancing and club meetings, committee room, dressing rooms, &c., and accommodation for a resident caretaker. There is a large store-room over the dressing-rooms and lavatories. The external walls are of studding plastered on the inside and rendered on the external faces on brick footings, except to the caretaker's quarters, of which the walls are in brick. Central heating and a separate gas boiler with storage cylinder in roof for the domestic hot-water supply are installed, and artificial lighting is by gas. The builders were Messrs. William Harbrow, Ltd., and the following were sub-contractors: Central heating, Norris & Dutton; roofing tiles, Poilite; ironmongery, Messrs. Stedall; sanitary fittings, Messrs. Pontifex; kitchen range, &c., Coalbrookdale Co.; gas boiler and gas fittings, Acton Gas Company.

A House at Hampstead.

This house, erected for occupation Mrs. J. Flood, is on the Frognal Hall and Priory Lodge estate, Hampstead, and adjoining the newly excavated road serving the estate. The site having a depth of 50 ft. only, it was found desirable to construct approach steps in preference to excavating for the entrance to the house. The general disposition was determined by the available garden, looking down which are the morning and drawing rooms. The latter and the dining-room and principal bedrooms have a south aspect. The 3 in. multi-coloured sand-faced facing bricks were supplied by Messrs. Pascall & Sons, together with the plain roofing tiles. The interior decoration is simple in character, the decorative plaster work being executed by Messrs. Baird & Co. Mantels and tiles by Messrs. Bratt, Colbran & Co. Heating by Messrs. Evans. Electric light by Messrs. Coleby. The general contractors were Messrs. James Lenn, Ltd. The quantities were prepared by Mr. Lawrance Hagen. Mr. Albert L. Farman was the architect.

A House at Guildford.

The traditional manner of Surrey domestic building has been observed in the design of this house, brickwork, half-timber, and tile-hanging being employed with delightful effect. Messrs. Baillie Scott & Beresford are the architects.

The Russell School, Ballards, Addington, Surrey: Carved Keystone.

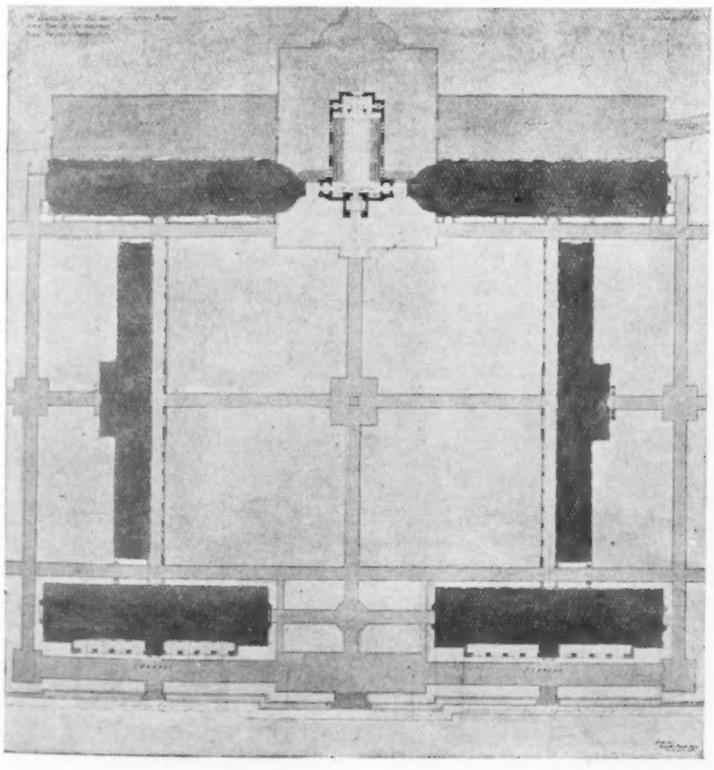
The Russell School, Ballards, Addington.

These new school buildings, which form the War Memorial of the drapers' trade, are planned on the level ground to the west of an existing house now used as a boarding house, and so arranged that they form part of a future quadrangle of generous dimensions if the school expands as anticipated. No better site for a school could possibly be found near London than this high ground above Addington. Aspect, prospect, and altitude combine to make the situation ideal, and the acreage is sufficient to prevent any interference from building developments in the future.

The buildings recently completed consist of three blocks connected by open colonnades at the angles. The centre block faces towards the original house, with the main entrance in the centre on the axial line of the old terrace. This block contains the sleeping accommodation for two houses of 40 boys each, with bedrooms for two assistant masters to each house. The matron's rooms, with the sick rooms over, are in the centre between the two houses and available for both. The accommodation for each house consists of two large dormitories on two floors containing 20 boys each, cross-lighted and ventilated to the east and west, and opening into ample lavatory and bath accommodation at the ends. The south block, facing the sun and the view, contains the day accommodation for two houses of 40 boys each on the ground floor, with six classrooms, and masters' rooms above. Each house contains a large day room for 36 boys, a monitors' room for four boys, and the usual changing and boot rooms, lavatories, shower baths, &c. The north block consists of the dining-hall, kitchens, masters' common room, staff rooms, and stores. The three blocks are connected on the ground floor by an open cloister, and below this cloister is a subway, which contains all the heating and hot-water pipes, the gas and electric mains, &c., for direct and easy access to all parts of the buildings.

The external design, limited to two floors in height, was dictated to a large extent by the need for light and air in all parts; and a free adoption of the late Georgian period in brick and stone, with sash windows and flat roofs, was decided upon. To emphasise the memorial character of the buildings the centre feature of the entrance front has been treated in a rather more severe manner than the remainder of the buildings, and is raised above them by the addition of a floor containing the sick rooms. The chapel is at present in course of erection. Messrs. Trollope & Colls, Ltd., were the contractors for the main buildings; and Mr. E. H. Smith, of Croydon, for the chapel.

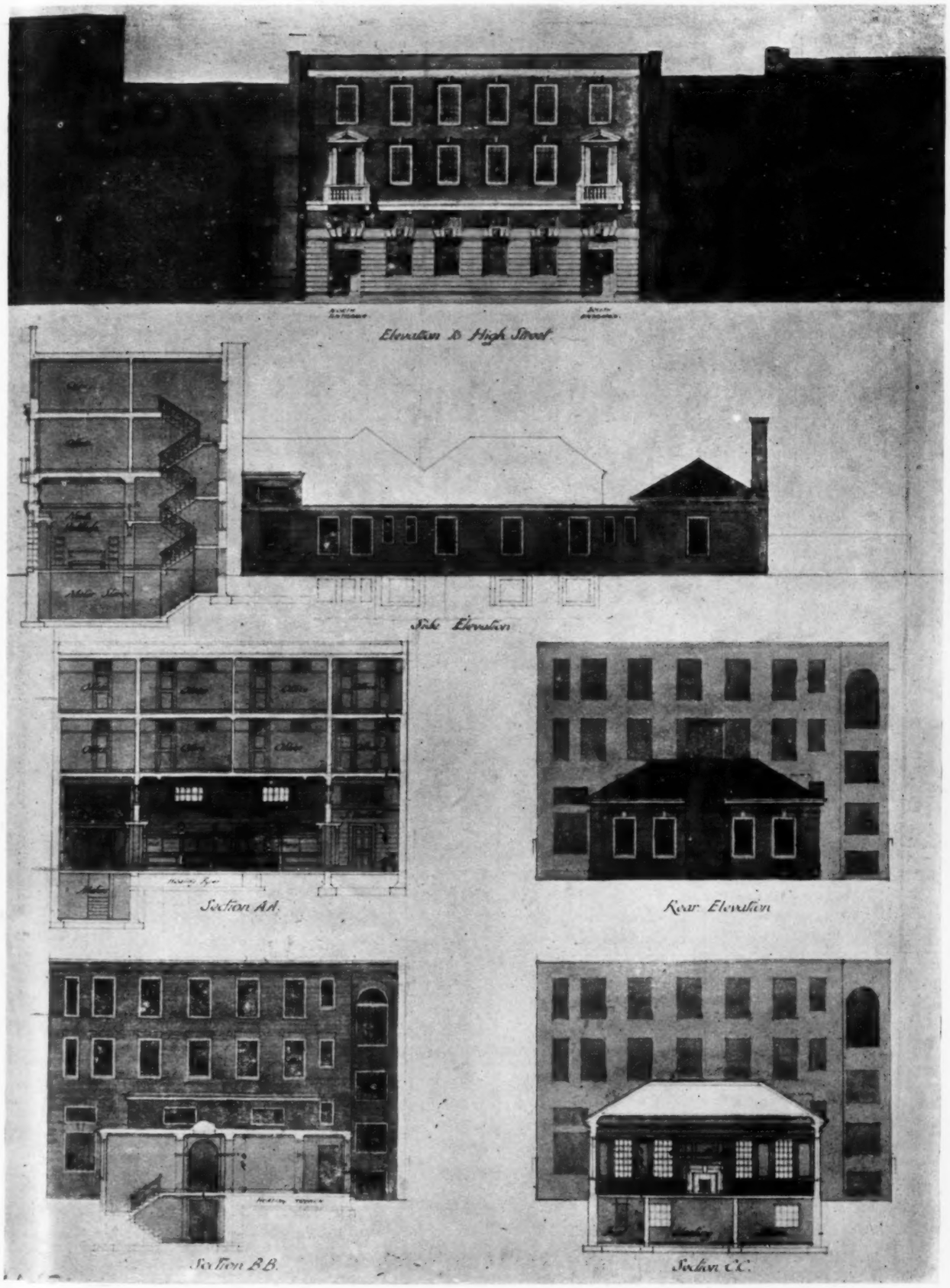
Sir Aston Webb PP.R.A., & Son are the architects.



The Russell School, Ballards, Addington, Surrey: General Plan.

West Bromwich Permanent Building Society's New Offices: Winning Design.

Messrs. John B. Surman & William T. Benslyn, AA.R.I.B.A., Architects.



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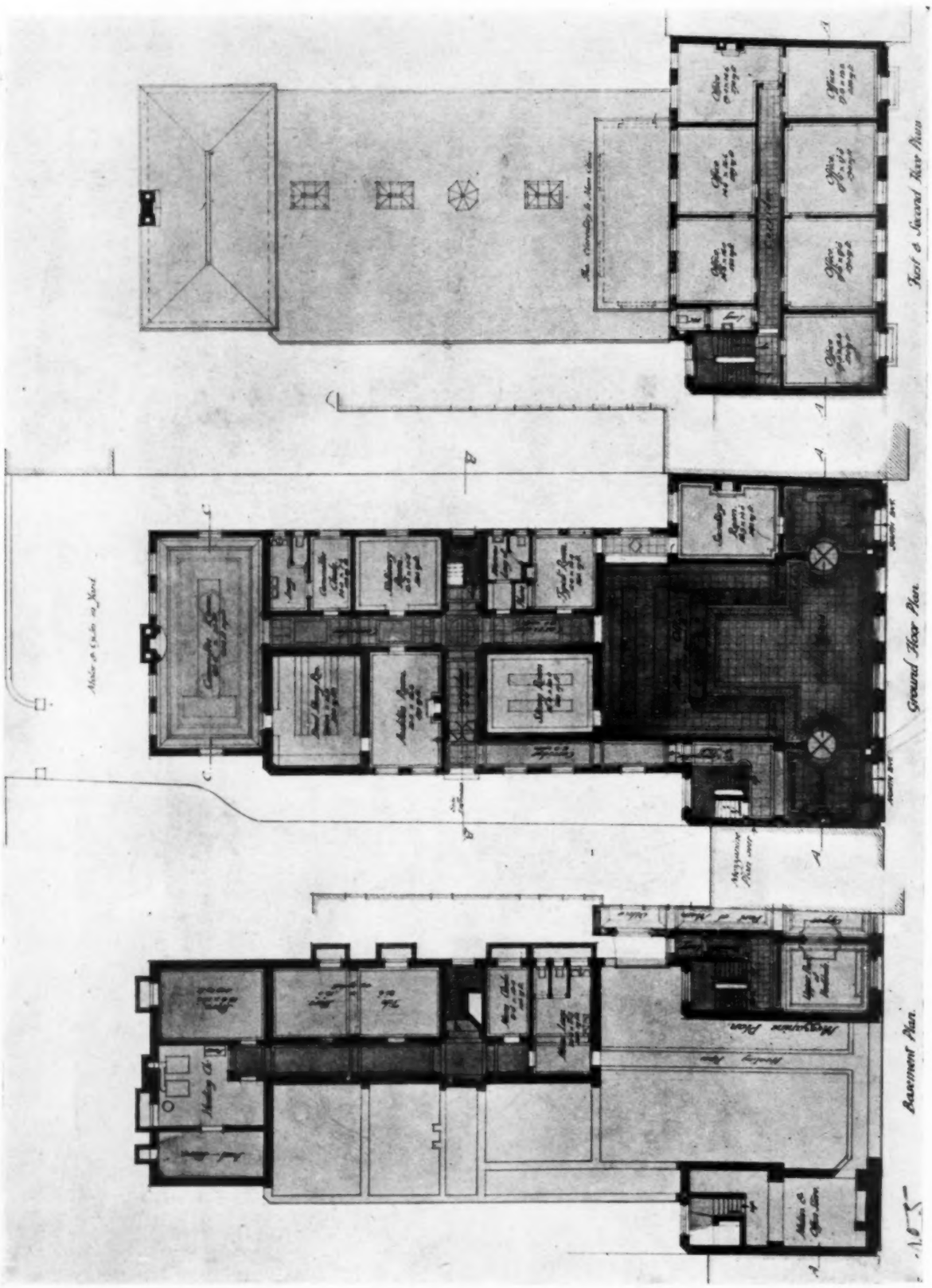

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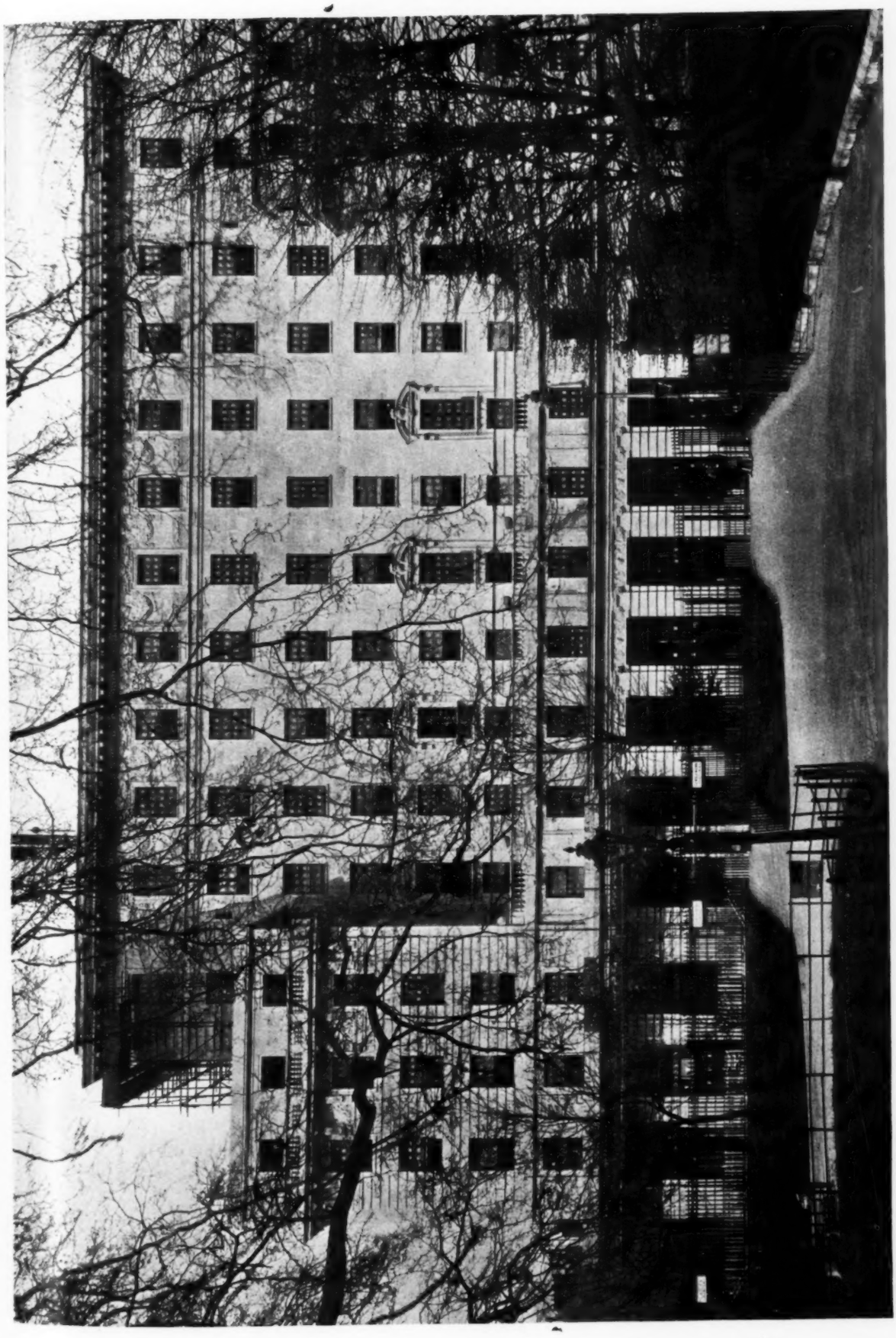
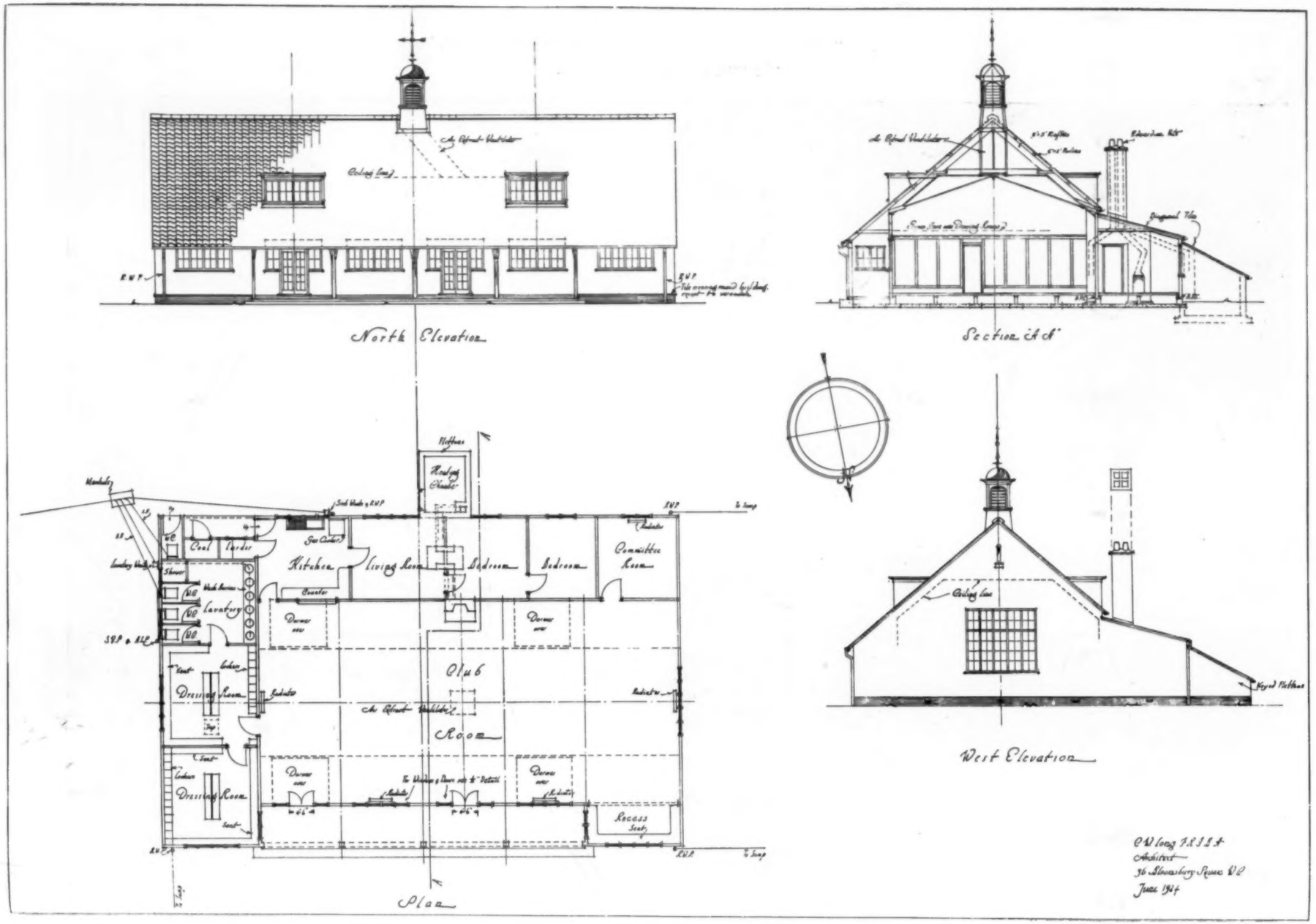


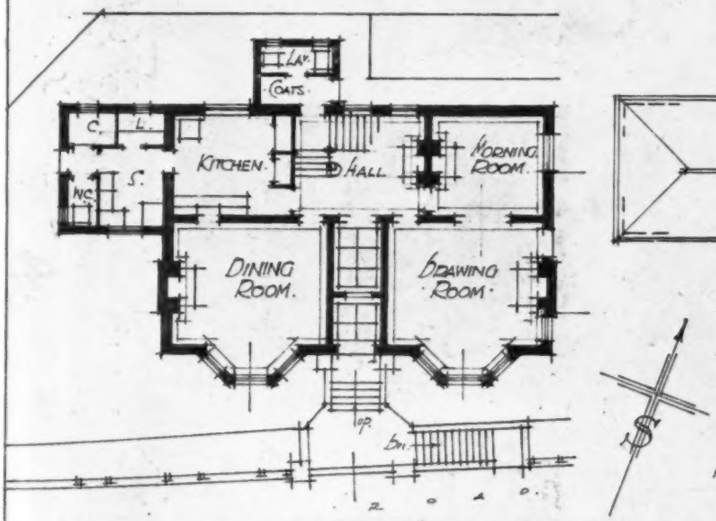
Devonshire House, Piccadilly.

Mr. Thomas Hastings and Professor C. H. Reilly, F.R.I.B.A., Architects.

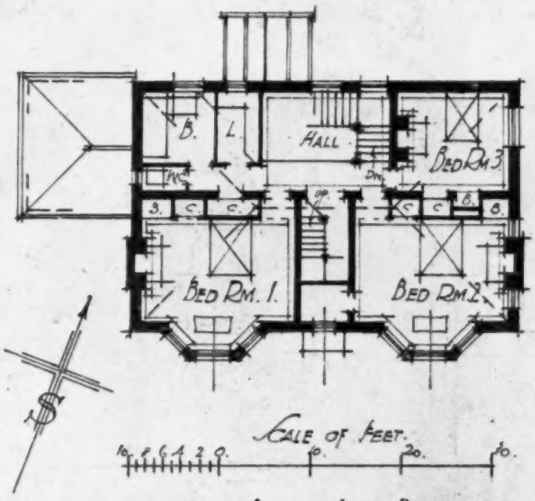


Sports Pavilion, Acton. MR. C. W. LONG, F.R.I.B.A., Architect.

FRONT ELEVATION



GROUND FLR. PLAN



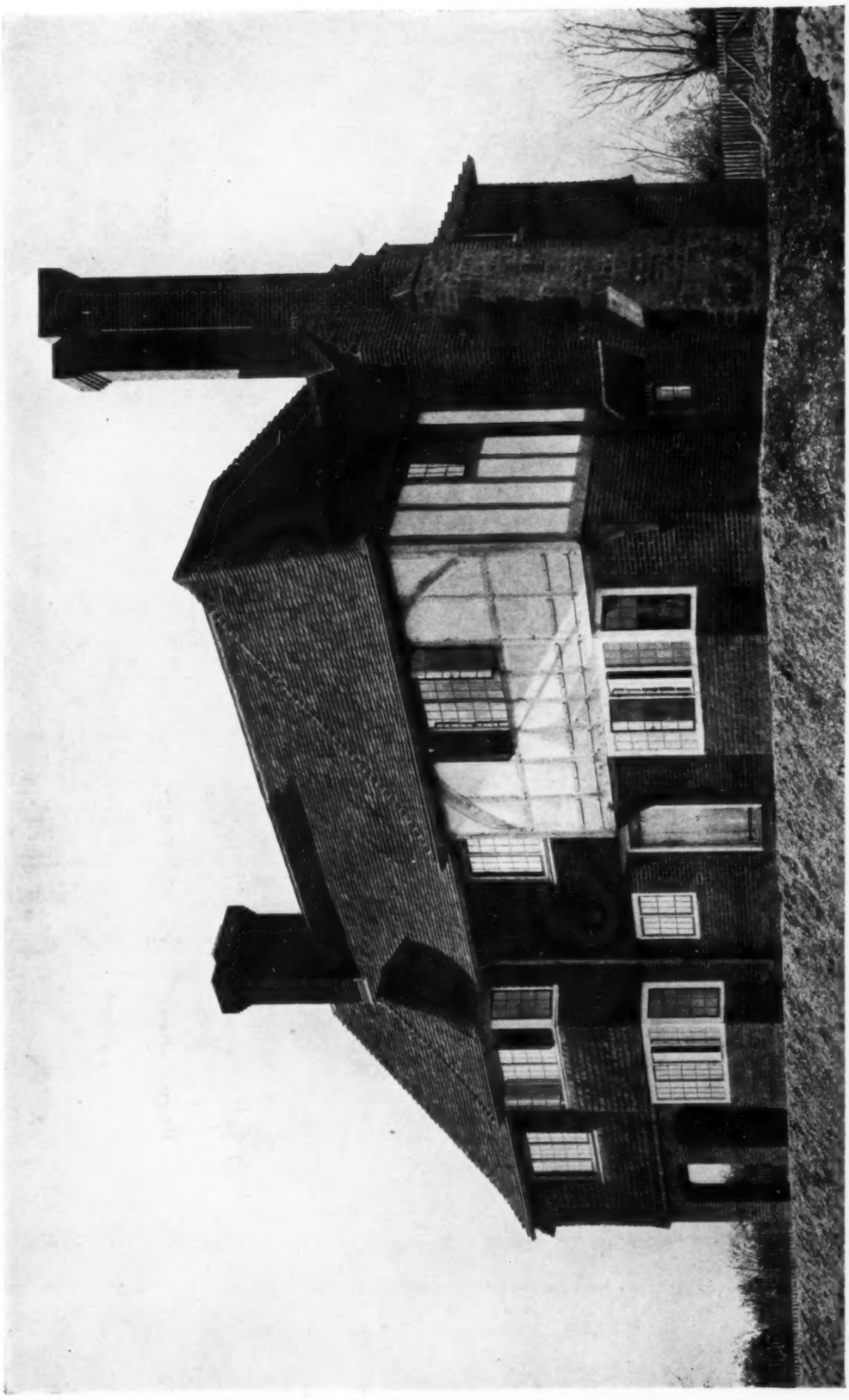
FIRST FLR. PLAN

SCALE 1/16" TO 1 FOOT. SEPTEMBER 1925	11 FROGNAL WAY, HAMPSTEAD FOR MRS. J. FLOOD	ALBERT L. FARMAN ARCHITECT. 24, BURLINGTON RD. W.2

House at 11, Frognal Way, Hampstead. MR. ALBERT L. FARMAN, Architect.

A House at Guildford : Detail of Principal Entrance.

Messrs. Baillie Scott & Beresford, Architects.

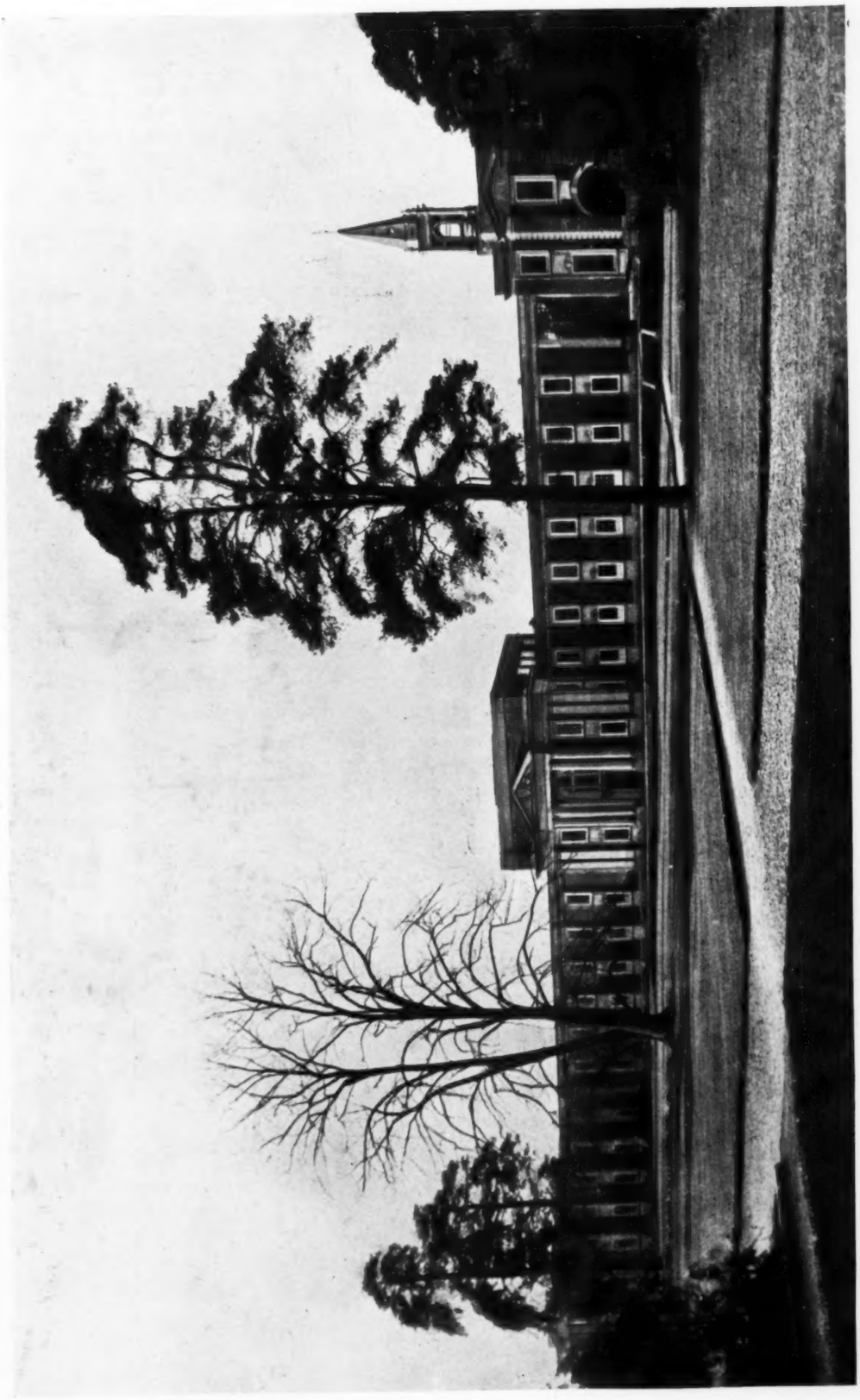


A House at Guildford: Garden Front.

Messrs. Baillie Scott & Beresford, Architects.

A House at Guildford: Entrance Front.

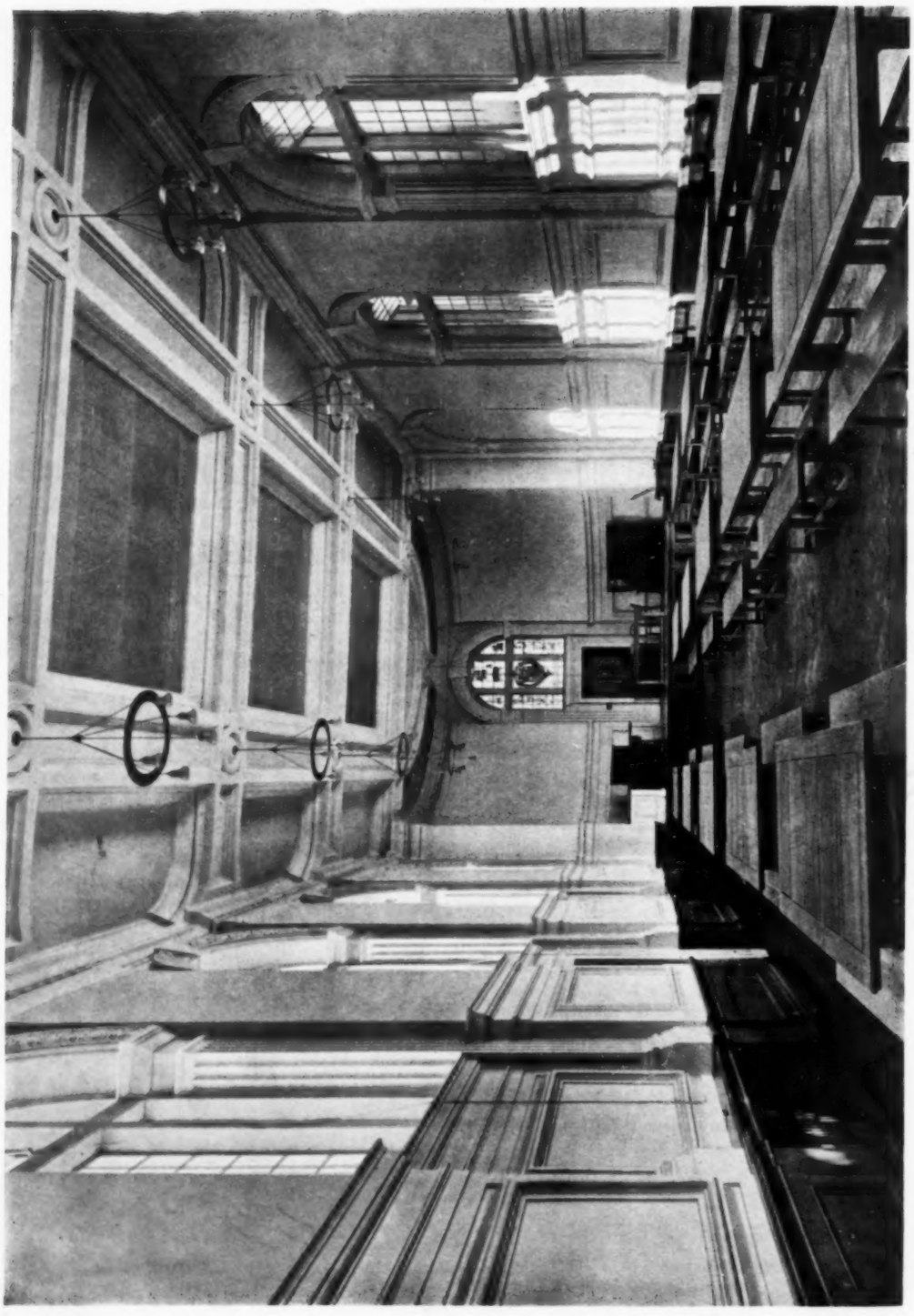
Messrs. Baillie Scott & Beresford, Architects.



The Russell School, Ballards, Addington, Surrey: Dormitory Block.

Sir Aston Webb, P.P.R.A., & Son, Architects.

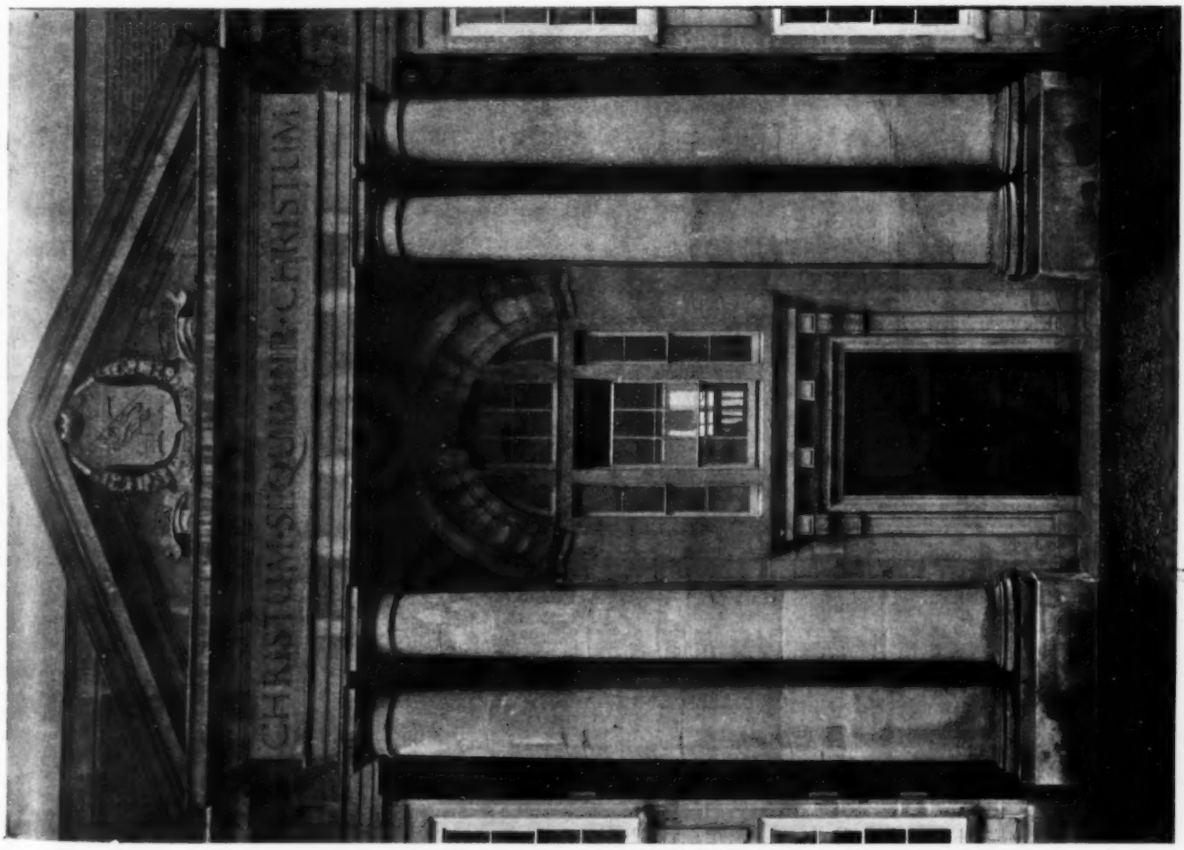
MESSRS. BAILLIE SCOTT & BEREsFORD, Architects.



The Russell School, Ballards, Addington, Surrey: Dining Hall.

Sir Aston Webb, P.P.R.A., & Son, Architects.

View in Cloister.



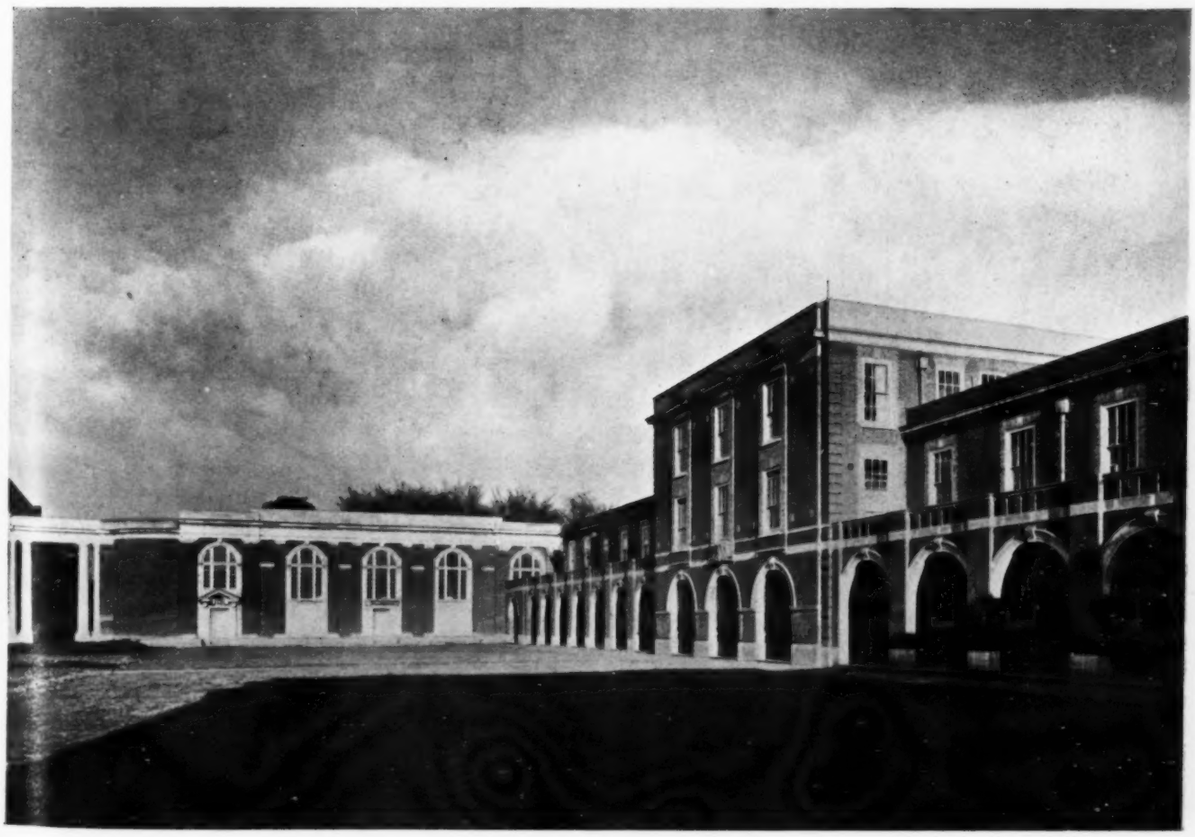
Detail of Entrance, Dormitory Block.

The Russell School, Ballards, Addington, Surrey. Sir Aston Webb, P.P.R.A., & Son, Architects.

The Russell School, Ballards, Addington, Surrey: Detail of Entrance, Dormitory Block.

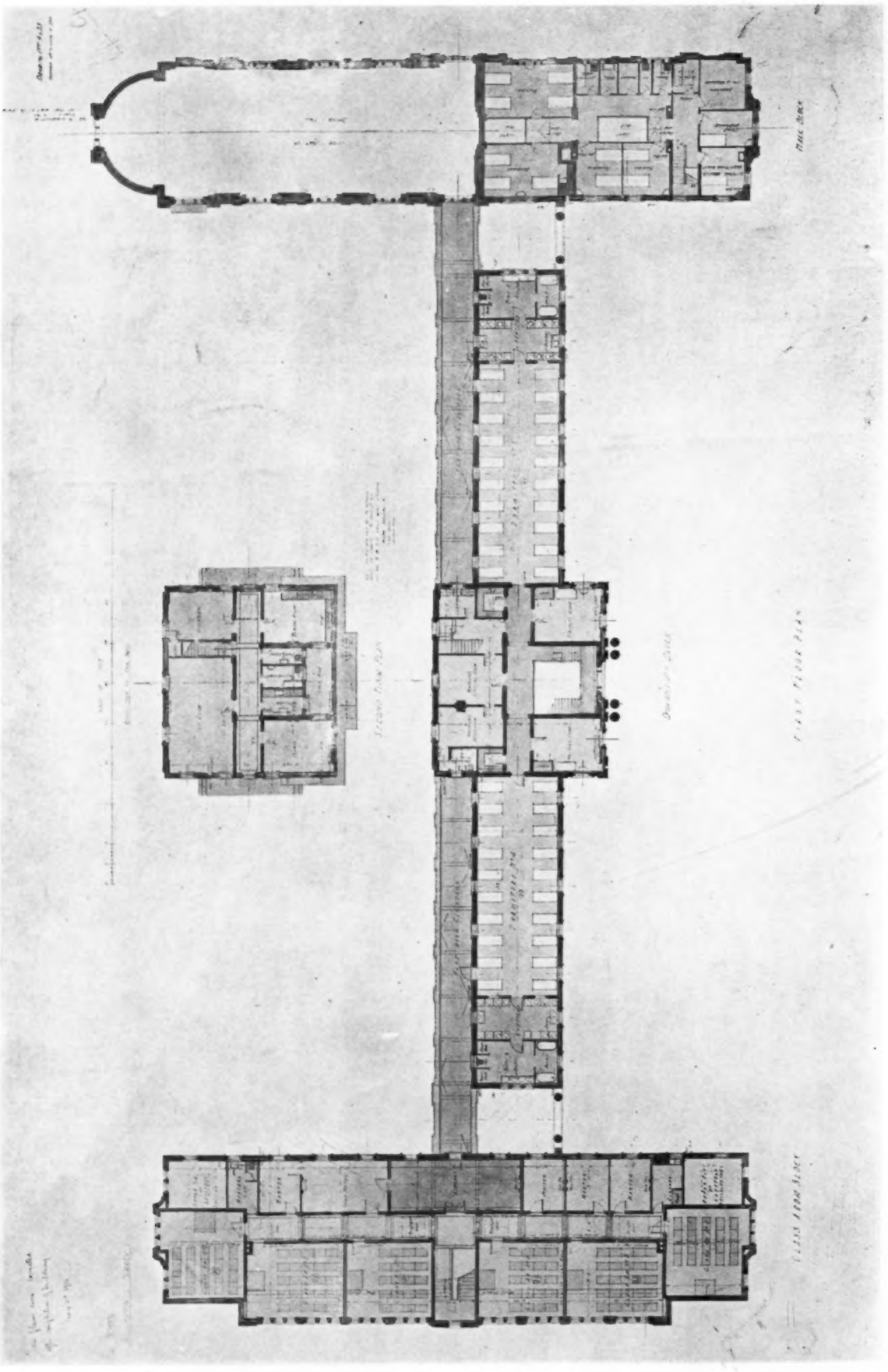
Sir Aston Webb, PP.R.A., & Son, Architects.

Dormitory Block.



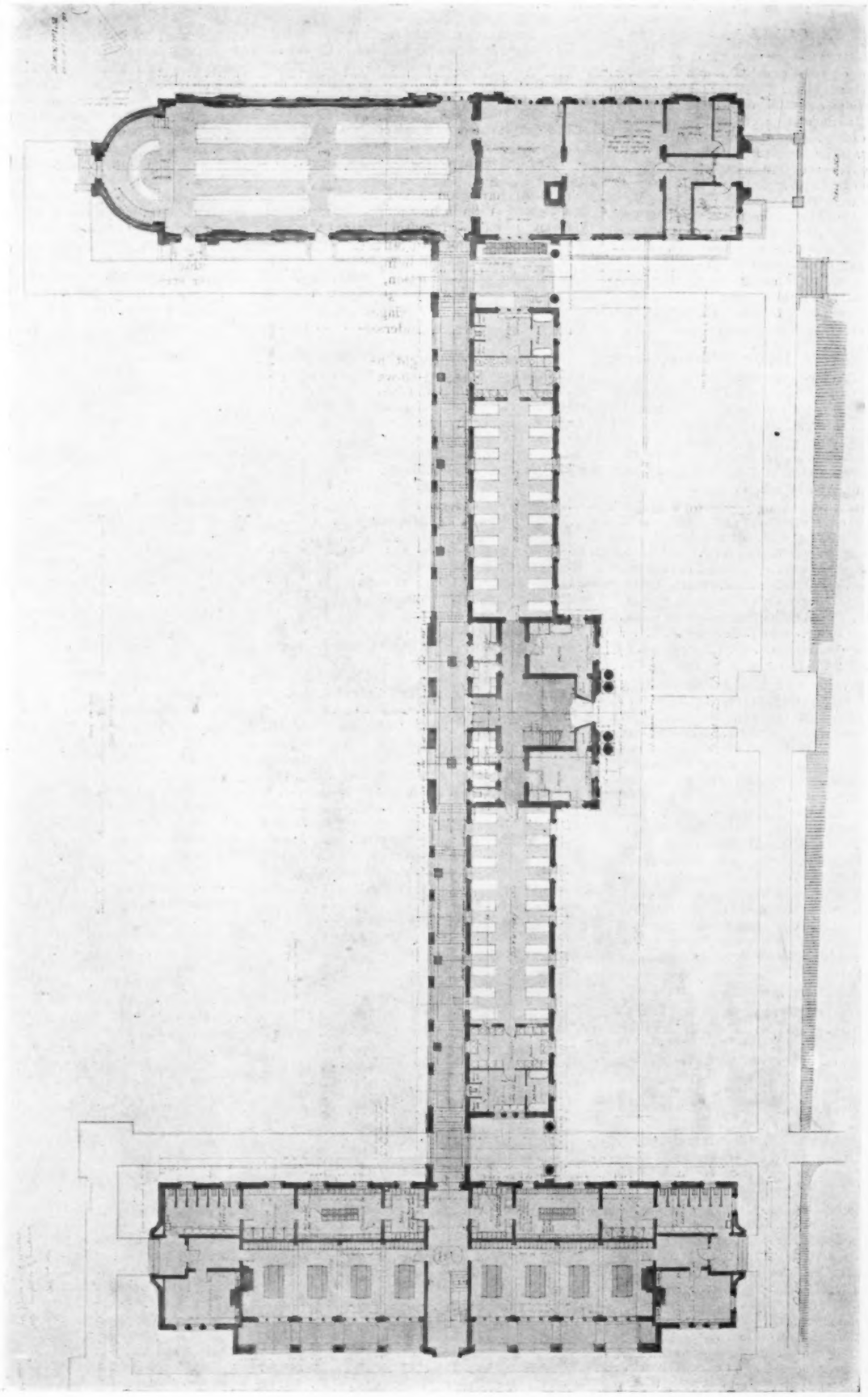
View of Dining Hall and Cloisters.

The Russell School, Ballards, Addington, Surrey. Sir Aston Webb, I P.R.A., & Son, Architects.



The Russell School, Ballards, Addington, Surrey: First-Floor Plan of Dormitory Block.

Sir Aston Webb, PP.R.A., & Son, Architects.



The Russell School, Ballards, Addington, Surrey: Ground-Floor Plan of Dormitory Block.

Sir Aston Webb, PP.R.A., & Son, Architects.

SPECIFICATIONS.—XIV

By H. V. MILNES EMERSON, A.R.I.B.A.

Item.

MAIN STAIRCASE.

238. Main Staircase.—From ground to first floor to be as detailed and to have 2 in. wrot deal close strings, 1½ in. pitch pine treads with moulded nosings and 1 in. deal or pitch pine risers, glued, wedged, blocked, and bracketed, with a pair of 7 in. by 3 in. strong fir carriages and bearers. The lower flight to have the outer string rebated and moulded on face. The landings to have 5 in. by 2½ in. bearers. The treads and risers to be tongued and grooved together and housed to strings. The quarter space landings to be glued and cross-tongued. The well-hole to have 1 in. staff beaded linings and similar moulded nosings at edge of floor. The outer strings to have 3 in. by 2 in. moulded capping tongued on and the wall-strings to be moulded. To have curtailed step at bottom with veneered front.

The handrails to be 3½ in. by 2½ in. moulded mahogany handrail, housed to newels, and with 6 in. moulded circular patera where abutting on walls. The second flight to have handrail fixed on wall with No. 3 gunmetal handrail brackets p.c. . . . each and to have scroll ends. To be grooved for and screwed to iron core rail 1¼ in. by 1¼ in.

The bottom newel to be 6 in. by 6 in. square turned mahogany and moulded as detail 6 ft. long. To be drilled down centre for ¾ in. gas barrel for gas or electric light. The other newels to be 4 in. by 4 in. square turned and moulded mahogany 5 ft. 6 in. long. All to be notched and grooved for strings, handrails, &c.

The balusters to be 2 in. mahogany square turned, two to each step and equally spaced on landings. To be housed to strings and screwed to core rail. The handrail to be . . . high off nose of step and . . . off landings.

239. Fire-resisting Staircase in hardwood.

Note.—To comply with the London Building Act a fire-resisting wood staircase must be in oak, teak, or other hard timber, with treads, strings, and risers not less than 2 in. thick. The landings should also be 2 in. thick, and newels, balusters, handrails, &c., should be in similar hardwood. Unless the staircase is wide carriages can be dispensed with. The underside can be exposed to view, the members being wrought with moulded brackets in place of the glued blocks, and with hardwood moulded joists under landings. If the soffits are plastered or panelled, carriages will be required. The following specification is in detail, but in writing a specification in conjunction with the detailed drawings of staircase such a full description as this would not be required. With such alterations as are necessary it should, however, serve as a basis for any principal staircase.

The full specification is as follows :—

The principal staircase from ground floor to . . . floor to be . . . ft. in width between the wall and outer strings formed with—

2 in. finished wrought hardwood twice grooved treads . . in. wide between the nosings, with moulded nosing, cut and mitred return nosings, and treads housed into wall strings (for cut string).

2 in. finished wrought-hardwood risers, rebated to treads, glued and blocked together, bracketed to carriages, housed into wall strings and cut and mitred to outer string.

Note.—For close string the cut and mitred return nosings and risers would be omitted, and treads would be housed into wall and outer string.

The winders to be formed up in a similar manner to the treads and risers, on strong bearers plugged to walls, with two dovetailed cross bearers to each tread.

Form solid moulded curtail steps, with veneered risers and scroll ends.

2½ in. to 2 in. finished wrought, solid hard-wood, rebated sunk, moulded, beaded, cut and mitred outer strings, housed into newels, and prepared for plastering.

Note.—If the outer string is to be a close string, the words "cut and mitred" would be omitted.

If in a fire-resisting staircase the outer string is to be rebated or sunk and moulded in the solid, the minimum thickness must not be less than 2 in. finished.

In an ordinary staircase the maximum thickness is specified.

The quarter and half space landings to be in 2 in. finished hardwood glued and tongued boarding, with hardwood joists plugged to walls.

1¼ in. hardwood rebated, sunk, moulded and beaded apron linings with . . in by . . in. grooved moulded nosings, with moulding under and tongued to landings.

Note.—If the apron linings formed a part of the landing construction, it would be 2 in. thick for the fire-resisting staircase only. The hardwood joists and carriages could be wrot and moulded on the underside if exposed to view.

2 in. finished wrought hardwood moulded wall strings, plugged to walls, with all ramps, heading joints, fitted ends, returned and moulded ends, tongued and mitred angles. To be carried round the landings as a skirting fixed on grounds.

7 in. by 3 in. rough carriages (two to each flight), framed into trimmers.

6 in. by 6 in. (or other size), square turned, or turned hardwood newels. (Then describe any special work to newels.)

3 in. by 2½ in. (or other size) hardwood moulded handrails, in long lengths, fitted together with handrail screws, ramped and kneed and housed into newels. The handrail to be placed (from 2 ft. 5 in. to 3 ft.) above level of nosings and at (3 ft. to 3 ft. 3 in.) on landings. To have . . in. moulded circular (or square) patera where abutting on walls.

The handrails on wall to be fixed with No. . . gun-metal handrail brackets, p.c. each, and to have scroll ends. To be grooved for and screwed to iron core rail, 1¼ in. by 1¼ in. To have all ramps, handrail screws, &c.

2 in. turned or square turned hardwood balusters, dovetailed into treads and landings, and housed into handrails. Each tread to have two balusters, curtails (one or more), and on landings to be spaced . . in. apart.

Note.—On close outer strings (which should stand about 3 in. above the nosing line of treads), the balusters would be housed in and spaced a stated distance apart.

240.—Soffits.—The soffits to be 1¼ in. or 1½ in. deal or hardwood, square framed with moulded panels, screwed to carriages and strings, and with cover mould to wall and outer strings.

The box room stairs to have ¾ in. tongued and grooved "V" match-boarding with small cover mould, or quarter round to wall and outer strings.

241.—Spandril Framing.—The . . framing under stairs on ground floor to be 1½ in. deal, or hardwood square panelled (or moulded) framing with 1½ in. door and stops planted on inside, all to match other doors, and as detail; or

The framing under stairs on ground floor to be 1½ in. deal or hardwood, square panelled, or moulded framing, the upper panels out for glass with loose beads. Hang in framing a . . panel moulded and square door, upper panels out for glass, hung on pair of 3 in. butts in beaded frame, with chamfered stops and fitted with lock and furniture, p.c. . .

242. Circular Stairs.—The treads, risers and wall strings described as for ordinary staircases. The treads and risers to be housed into wall string and to a central deal, solid or built-up, newel 6 in. or more in diameter. Rough fir bearers . . in. by . . in. to be fixed for plastering. The handrail to be . . in. by . . in., fixed to wall on gun-metal or iron brackets . . in. apart, or the handrail can be in iron.

Notes.—Outer strings can be rebated, sunk, moulded, or beaded out of the solid or, if extra depth is required, the string can be built up.

Wall strings can also be in one or more pieces.

Outer and wall strings can be finished with a moulded capping on top, and the outer string can also have a moulding planted on the bottom edge. This would also apply to the wall string if the soffit of the stairs is exposed to view.

Thick treads can have solid moulded nosings.

In housing schemes, &c., the handrails are simply housed into the newels, without ramps or knees.

If the outer string and handrail of a staircase are continuous, starting only with a newel, then the outer string would be specified as: 1¾ in. to 2¼ in. solid wrought deal, rebated, sunk, moulded, beaded, cut and mitred continuous outer string, with iron core on the under side, and with wreaths glued up in thicknesses, veneered if in hardwood, and fitted to newel and apron linings.

The handrail to be continuous . . in. by . . in. moulded oak, mahogany, &c., with all wreaths, twists, and handrail screws ramped to newel, and fitted to . . in. circular moulded patera where abutting against wall. Care should be taken that the wreaths are not crippled. The balusters, &c., would be as for other staircases, but extra stiffness is obtained by the introduction (about every 8 ft.) of iron balusters made to match the wood balusters.

The continuous handrail can be strengthened with iron core, as previously described to wall handrail.

Specify if the spandril ends of steps have cut and ornamental brackets mitred and planted on or if with panelled or carved brackets planted on.

Newels, instead of being solid, can be framed up, glued, and blocked together, with panels, carving, &c., as detailed.

243. Partitions.—To be 2 in. or 1¾ in. deal square-panelled framing .... panels high, secured to floor and ceiling with 2 in. by 1½ in. chamfered fillets. To be let into plaster where abutting against walls, with small cover mould planted on each side. Form opening for and hang in same on pair 3 in. butts .... panel door, and fit with mortice lock and furniture p.c. .....

Note.—The door and frame can be rebated and beaded, or the frame rebated and a thinner door used, or stops can be planted on one face of the partition..

The partition to . . to have . . in. by . . in. deal wrought, rebated, moulded, and beaded frames, transoms, and heads. Fill in with 2 in. square framed and moulded panels, with beaded fillets. Fill in above transom with 2 in. moulded sashes with beaded fillets, the centre lights hung with 3 in. wrought-iron butts. The doors, where shown, to be hung on pair 4 in. wrought-iron butts and fitted with mortice lock and furniture p.c. .....

244. Dwarf Partitions.—To be 2 in. oak, &c., moulded both sides square framing .... panels high, with 3 in. by 2 in. moulded and grooved capping, framing fixed to floor with wrought-iron angle brackets every . . ft. apart. Let in flush and with countersunk screws.

Form in framing, doorway .... wide, and hang in same 2 in. oak, &c., moulded both sides. Door to match partition on pair spring hinges p.c. ...., and fit with two brass handles p.c. .... each, and one . . in. brass barrel bolt.

245. Screens.—The opening, where shown, to have 5 in. by 3 in. wrought, rebated, moulded, and beaded frames, with side lights, transoms, and heads. The side lights to be framed to match the doors in all respects, which are to be 2 in. lower panels moulded or square, as described for internal doors, and upper sashed for glass and moulded as detail. Fill in above transom with 2 in. moulded sashes, the centre lights hung with 3 in. wrought-iron butts. The doors, where shown, to have hollowed frames for swing hinges and otherwise fitted as described for internal doors.

BUILDING COSTS

MACHINERY *v.* HAND LABOUR

High labour costs and the early dates at which buildings are required to be completed to satisfy the client have forced builders and contractors to increase the efficiency of their organisations and consider the use of machinery wherever possible. It is only by such means that large parts of London and other big cities have been rebuilt during the past few years, and that we are able to see such large buildings as the new Devonshire House and others rise from foundation to top floor level in less than a year. We are apt to cast envious eyes at America when we hear of the high speed at which building operations are carried out there, forgetting that when our large contractors lay themselves out to do so, they can, and often do, achieve the same rapidity of construction.

So far as the large city building erected by an up-to-date contractor is concerned, modern methods of construction and the usually restricted nature of the site militate against increasing the amount of plant on the job. But on many medium-size and smaller building works there is often still considerable scope for reducing costs and increasing speed by a more extensive use of plant. Further, it has to be remembered that better work in such operations as concrete mixing is always obtained by the use of machinery, and that the machine performs its work as well at the end of the day as at the beginning.

There is, of course, a limit to the amount of work to be done below which outlay on plant is not justified. It is not an economical proposition to buy a steam-roller to level a garden path, and neither is it a wise investment to purchase a hoist to elevate a thousand bricks a short distance, or an excavator for a small foundation job, or a power-driven mixer for turning over a few yards of concrete. But above a certain limit machinery will be cheaper if it can be kept in fairly constant operation, and in this connection it should be borne in mind that many such items of plant are mounted on road wheels so as to be readily portable from job to job, so that the same machine, if it be a mixer, may be used on several building works going up at the same time if they are reasonably close together.

Whether the purchase of plant will be an economical proposition or not can only be determined by the individual builder, according to the volume of work he does. It is the purpose of these notes to give some figures comparing the cost of performing some of the most common building operations by hand and by machine, so that they can be applied to any particular business. The figures will, of course, vary according to the rates of wages in any particular district, but this can be readily adjusted.

Hoisting.

Elevating materials is an operation practically inseparable from any building work, and is usually very expensive in labour. If the height is not more than a few feet, wheeling up an inclined ramp will generally be the cheapest method unless the quantity to be elevated warrants the installation of a conveyor. Above a certain height the most common method of hoisting is the rope and gin-wheel, and for small quantities it is no doubt the cheapest, but if any considerable amount of material is involved, mechanical means should be considered. We will, therefore, compare the cost of hoisting concrete by a rope and gin-wheel and by a power-driven hoist. With a gin-wheel, two men are required, one filling the pails, and the other hauling on the rope, and taking turns on the work owing to fatigue. The capacity of the pail would be about one-third cubic foot, and the rate of hoisting, even with the most energetic workers, would not exceed 30 ft. a minute. If we take a lift of 30 ft., and allow one-third of the period for returning empty buckets, hitching on and taking off, and resting, two men by this method would elevate nearly 2,000 lb., or about ½ cub. yd. in one hour, at a labour cost (two labourers at 1s. 4d. an hour) of 2s. 8d.

Now we will consider the rail-and-platform type of power hoist that is coming into increasing favour for raising materials of every description. Such a hoist, if employed in elevating concrete, would carry a concrete cart or barrow, which would be filled direct from the drum of the mixer and wheeled straight on to the platform of the hoist. Such a hoist would be capable of lifting 5 cub. ft. at a speed of anything up to 150 ft. a minute, so that, allowing half the time for return journeys, wheeling on and wheeling off, in one hour the hoist would make 150 ascents with a load of 5 cub. ft., or a total of 750 cub. ft. per hour. The same number of men would be required as with the gin-wheel and rope, and if an extra 2d. per hour be allowed for the operator of the hoist, we get a labour cost of 2s. 10d. an hour.

To this figure has to be added the cost of motive power. If a petrol engine be used, the petrol consumption would be about 1 gall. per hour or less, costing, say, 1s. 6d. Capital cost and depreciation have also to be added. A hoist of this capacity costs from £200 to £250 complete, and its life should be ten years or more; but if we take the very low life of five years before the hoist shows any serious signs of wear and tear, it will be seen that a depreciation allowance of £40 a year is more than generous.

On these figures, the cost of hoisting 1,000 cub. yd. of concrete by hand would be £266 for labour. If a power hoist were used for lifting 1,000 cub. yd. during a year the cost would be :—

Labour	£5	2	0
Petrol	2	14	0
Depreciation	40	0	0
Total	£47	16	0

These figures put the whole of the allowance for depreciation for a year on to the hoisting of 1,000 yd. only, and show a difference of £218 in favour of the power hoist. Out of this must be made allowances for such factors as the capacity of the hoist exceeding the capacity of the mixer or the requirements of the job, when the hoist would be standing idle part of the time, with a consequently bigger bill for wages. Also, it does not often happen in medium size or smaller building works that 1,000 yd. of concrete are required to be hoisted on one job, but it will be seen that there is a considerable margin out of which to meet the cost of erecting and dismantling the hoist and taking it to a different job and other factors.

Excavators.

Except on works involving a very considerable amount of excavation, the cost of a steam shovel would be too high to make it attractive, but their output is so great that if they could be more readily hired for short periods, they would be in greater demand for smaller works. A steam-shovel with a ½-cub. yd. dipper will excavate up to 40 cub. yd. per hour, according to the nature of the soil and the depth of the cut, at a cost of a few shillings for labour and fuel; whereas, with hand labour, 1 cub. yd. an hour, at a cost of 1s. 4d., is hardly ever exceeded even in the most favourable conditions.

Further, a steam-shovel will dump the contents of the dipper to a radius of more than 20 ft., and to a height of over 12 ft., without re-handling, so that even on comparatively small works it may be worth while to make

Model of London's First Water Works, erected 1582 on Old London Bridge.

(A "Builder" Exhibit at the Building Exhibition, Olympia.) (*See* page 659.)

inquiries to ascertain the cost of hiring a steam shovel.

Concrete Mixing.

On an average the hourly output of a gang of four men mixing concrete by hand is about 1½ cubic yards, so that with labour at 1s. 4d. per hour the labour cost is about 3s. 6d. per yard.

The cost of machine mixing varies according to the size of the machine and the batch, as the labour required on a larger machine does not increase in the same ratio as the output. For the purpose of comparison we will consider a mixer with a batch capacity of 4 cubic feet, and reckon it has an output of only 6 cubic yards an hour. Normally four or five men would be mployed about a machine of this size, one eperator and three or four to load into the drum and wheel away. For an output of 6 cubic yards the wages cost (labour at 1s. 4d. an hour) for five men would be 6s. 8d., or roughly 1s. 2d. per yard of mixed concrete. The cost ot the machine would be between £100 and £150 or so, according to the type selected, and its life anything up to twenty years. If, however, the life be taken at ten years only, and the cost at the higher figure of £150, an annual sum of £15 would be required for depreciation, or, say, £20 for depreciation and renewals.

With the very low output of 2,000 yards a year—and this is a very low figure, allowing the machine to be operating for only eight weeks during the year—this allowance for depreciation and renewals would add about 2½d. to the cost per yard.

The type of mixer under consideration is usually driven by a petrol engine of from 3 to 4 h.p., consuming about two gallons of petrol per eight-hour day; the cost of petrol and lubricating oil is thus little more than 1d. a yard.

Under normal conditions, therefore, and allowing for a very small annual output, the cost of machine mixing concrete per yard is made up as follows:—

Labour	1s. 2d.
Depreciation and renewals ..	2d.
Petrol and lubricating oil	1d.
Total	1s. 5d.

Compared with 3s. 6d. per yard for hand mixing

Shuttering.

There are few items of plant on which more money can be wasted than formwork, whether the forms be used for fireproofing structural steel or for reinforced concrete construction. This is not so much the case with straight walling or floors, but particularly applies to columns, cornices, and members which are at all unusual in shape or complicated to shutter. For this reason some data on column forms is given, as these are the most commonly used type where much waste of timber can occur.

If there are any considerable number of columns to erect or fireproof, it will very frequently be found that steel forms will be cheaper than timber, even if they cannot be hired and have to be specially made for the work. It is only necessary to purchase or hire a few, as they can be used over and over again almost indefinitely, whereas timber shuttering can seldom be used more than ten times however carefully handled and kept in repair.

No figure of the cost of steel forms can be given, as this will vary according to their size and shape, and the cost per column for erection will depend entirely on the number of times they can be used.

The cost of timber shuttering can, however, be readily found from the following data:—For plain square columns, approximately 0.25 cubic feet of timber will be required per square foot of contact area. To make up forms for 100 square feet of contact area of interior square columns will take about 4 hours carpenters' time and 2 hours labourers' time. Erection willl take about 8 hours carpenters' time and 4 hours labourers' time. Stripping will take about 1½ hours carpenters' time and 3 hours labourers' time. Cleaning and stacking will take about 1 hour labourers' time. The cost of 100 square feet contact area of shuttering for square columns is therefore:

13½ hours carpenter – at	.....
9 hours labourer – – at	.....
25 cubic feet of timber – at	.....

The cost of cleaning and stacking, or removing to the next set of columns will, of course, have to be reckoned whether the forms are of steel or wood. The cost of nails, bolts, &c., used in fixing timber forms has to be added, but does not arise in the case of steel forms.

For columns of different shape the formwork is more difficult to make up and strip, and more timber will be required. An increase on the figures for square columns, of 50 per cent. for octagonal columns, and twice as much for round columns would be a fair allowance.

By using the above data and ascertaining the cost of hiring steel forms, or even having them specially made if the job be large enough, the builder can readily ascertain what saving may be effected. Steel column forms may now be obtained which expand and collapse to fit different size columns, so that the same forms may be used for various jobs.

THE USE OF MODERN MATERIALS

We are all acquainted with what might be termed "stock" building materials, which have proved their worth and reliability for many centuries, but with the march of time new methods have been employed in manufacturing building materials, with the result that what was looked upon as waste in the past is now successfully employed in the erection and decoration of modern buildings.

Bricks in the earliest times were made of clay, with which straw was incorporated in order that they should not easily crumble after they had been hardened by the sun's rays. History has apparently not recorded who first introduced the brick that, burnt with fire, superseded the sun-baked article, but records of old buildings in this country, such as the Whitgift Hospital at Croydon, erected 1596–99, show that brick-making had not reached the perfection it has to-day. The following letter, dated March 7, 1596, from the Rev. Samuel Finch to Archbishop Whitgift, by whom he was employed when he founded the hospital to make contracts, superintend the workmen, &c., relating to the trouble experienced with the making of the bricks for this building is interesting:—

"Rednap came hither this day; and as sone as ever he came into the yards and sawe the bricks his harte was deade; he went at them, and chose here one and there, and knockt on it and saith, 'He hoped there ware better to be founde in the Parke.' To the Parke we came, and there went from clampe to clampe, and here we found and there some one or more good, but not to the purpose of his own expectation. Fain he would have excused himselfe, but his handie worke spoke against him, and we ware soe rounde with him, that he burste out into teares, sayinge, 'He was never the like served in anie worke (he was ashamed of it); he ould not excuse it; yt was the wickednesse and deceitfulnesse of the yearth. And albeit he coulde not thoroughlie make amends, yet he could be contente to doe what lay in him, but not of that yearth.' Well, then, to the lome pitts beyond Dubber's hill we came, neere Haylingegate, where bricks had been made in tyme past. There he founde such moulde as contented him, and with much parlinge was contente to give my lord the makinge of fiftie thousande and of X thousande for waste (nothing in comparison, but yet as much as we coulde get him to yealde unto), and to make L thousande more at the price he made for in the parke, having all necessaries founde him as he had in the parke."

Bricks in country districts are still made to-day by the same means that were employed in the past centuries, but with the increasing demands new methods and new materials have been introduced. The production of the fletton was a great departure in the manufacture of bricks. Composed of an oily shale ground and pressed together in a mould and burnt in a specially constructed kiln, the resultant brick is perfect in shape and hardness. Without waste millions weekly are being produced in the Peterborough district, but such is the demand for bricks that other materials are being employed in their manufacture. Bricks composed of sand and lime and steamed in a kiln are largely used in districts adjacent to the works. These bricks are very strong, with great crushing resistance, and become harder in proportion to the time they are exposed. Waste products from the smelting furnaces, which have hitherto formed disfiguring heaps over the country side, will no doubt disappear, for this material is being crushed, mixed with cement and converted into bricks within twenty-four hours. Bricks are also being made from sawdust, shavings, and other materials.

Hollow bricks are being increasingly used in the construction of light buildings, fire-resisting floors, &c., and, in the form of terra-cotta; the early trouble experienced in shrinking and warping has been overcome. Obtainable in various colours, terra-cotta is finding increasing favour in this country, and is especially suitable where a smoky atmosphere is present.

Stone is not always the genuine article is appears to be, for, with the aid of cement, the waste stone is crushed and recast, and in the new form has weathered equally well as, if not better than, when used in its original state.

With the growing tendency for colour in buildings and especially in housing schemes, cement plays an important part. Used in conjunction with permanent colours, we shall no doubt have concrete houses in a range of as many colours as were to be found in Joseph's coat. An evening paper commented upon this colour possibility recently as follows: "The bois de rose hotel, the tête-de-nègre cottage, and the purple farm will soon break our habit of expecting to see buildings made from local materials, and so toning with the landscape. Here is vast scope for the netx seaside resort which lays down a concrete esplanade."

Cement plays an important part in new building materials. Manufactured with the greatest care and in conformity to the British Standard Specification, it is responsible, in the form of ferro-concrete, for a great and increasing number of important buildings in all parts of the world. Mixed with breeze (considered a waste material a few years ago), and cast in blocks, it has largely replaced brick partition walls and practically superseded the stud partition.

A new material for partitions, &c., has been recently introduced, consisting of wood wool or vegerable fibre compressed into slabs in various sizes up to 2¾ in. thick and rendered fireproof. The material is extremely light, and is suitable for floors, partitions, and ceilings; forms a good key for plastering, and being a non-conductor of heat or sound, should form an ideal material for hotels and similar buildings. Another material that resists sound, heat, and cold is a quilt made of specially prepared seaweed, which is rendered fireproof.

Asbestos is now a recognised building material. Mixed with cement, it is largely used as a roofing agent and, owing to shortage of plasterers, is used for covering internal walls and ceilings.

At one time it could only be obtained in a diamond pattern for roofing purposes, but it is now marketed in a variety of shapes and sizes, from the corrugated sheet to the pantile, whilst the colouring has lost its early crudeness. The manufacture of this class of material has improved so much that reputable firms have no hesitation in guaranteeing its durability.

Asbestos is now made into felt for roofing purposes, being supplied in rolls and laid like ordinary felt. It is permanent and fire-resisting, and its use opens up the possibilities of the return of the thatched roof, which could then burn, if it thought fit, without damage to the structure; in fact, it would be a quick and effective way of stripping when the roof required re-thatching.

Felts are largely used in building operations. A few years ago felt was used only as a roof lining under slates or tiles. Made of fibre and treated with bitumen, it is now used as a roof covering. Cheaper than slates and more durable than galvanised iron, it will stand the most trying climatic condition, being waterproof, weather-proof, and acid-proof. Condemned in all quarters a few years ago, it is now, in its improved form, extensively employed as a damp-proof course. It is largely used in timber-framed buildings, as, on account of its non-conductive properties, it helps to maintain an even temperature.

In the old days, when a slate roof became leaky through broken slates, &c., the whole of the roof had to be stripped and relaid. In these expensive days this cost can be largely avoided by the use of one of the many plastic preparations on the market which makes leaky roofs permanently waterproof. Made of the fines Canadian asbestos and plastic gums, it has about the same consistency as putty, sticks with tenacity, hardens but does not become brittle, will not crack, and lasts indefinitely.

Clay tiles have been used for centuries, and the hand-made weather-beaten tiles from the roof of a demolished structure are eagerly sought after. The manufacturers have of late years produced perfect reproductions of these hand-made tiles, in addition to the ordinary class of roofing tile, but, as with the elusive brick, the demand has been greater than the supply. The result has led to the introduction of new forms—one, the Courtrai type, consisting of a flat and roll. These tiles are interlocking, can be laid to a flatter pitch than that required for a plain tile, and weighing only about 7 cwt. to the square, light timbers can be used. The tile can be nailed if required through a lug at the back which also serves the purpose of the nib on the ordinary tile.

Metal casements have entirely replaced the wood double-hung window. Fixed direct in the brick reveals or in wood frames, they are wind and weather proof, and practically air-tight. For upper stories they are hung on special hinges, which allows for the outside of the window being cleaned from the room. For bedrooms, &c., ventilators are provided, and these, together with the sashes, can be left open in the stormiest weather without rattling.

Asphalt has been used for years for roofs, damp-courses, &c., but owing to its colour, i had its limitations as a flooring material. Coloured asphalt is now upon the market, and thus another material has been added to those with decorative uses. It can be used in floors and dadoes to all types of buildings, and is warm and durable.

Mention was made earlier in this article of the use of asbestos sheets for lining interior walls and ceilings in lieu of plaster. Other materials that are also suitable for this work is a fibre board made of wood pulp. A disadvantage in the early days was its liability to expansion and contraction during change of temperature or the presence of moisture, but this defect has been eliminated to a large extent; in fact, it is possible to line the walls with this material and paper it without the paper cracking at the joints.

In woodwork, with the introduction of the three-ply board, it is now possible to use the most beautiful woods in interior work at an economical cost and without the fear of shrinkage.

Copper is not a new material; in fact, it is a very old one. In the old days it was a fortunate architect who was employed by a client rich enough to have his roof covered with copper. Now it is being used largely in the form of copper tubes for hot and cold water services in housing schemes, and is giving every satisfaction.

One cannot close this article without some remarks upon the use of steel in the construction of houses. Whatever the critics say, they have come to stay. "We accept," says a correspondent, "without any question steel sashes, steel butts, steel this and steel that, used in the construction of buildings, and steel bridges are a matter of course, but when the question of building steel houses arises, then all sorts of absurd theories are put forward, the most common being the danger from lightning, hot in summer, cold in winter, they will rust! and so on. Upon this subject the claim can be made from practical experience that, with scientific construction, a steel house can be made to last as long as the brick house, that it is as safe, if not safer, against lightning; it is warmer in winter, cooler in summer, more sound-proof, weather-proof, rain-proof, and drier than the ordinary brick house. In a brick house the party wall is used simply as a division between the two houses, and does not enter into the construction of the house. If you remove the doors, windows, and all timber work from the front and back walls, it will be found that the brickwork constitutes a very small part of the construction. With one or two exceptions, the present steel house is the production of engineers, but later, when architects realise the possibility of steel, we shall experience, with their aid, a great advance upon the design of the present structures."

FLOORING MATERIALS

Wood has been the generally accepted flooring material in this country for many centuries, and it still holds a strong position on account of its suitability for this purpose. It is resilient, warm, can easily be cleaned, and wears well. Oak and elm were used to a large extent in the earlier days not with the straight joint throughout each board, but an assembly of boards of various widths so arranged as to produce a straight joint throughout here and there. Red and yellow deals and spruce have now entirely eliminated hardwood in ordinary house flooring. In the better-class work the plain oak flooring boards are used, secretly nailed in order not to spoil the appearance of the floor, or one of the many attractive patterns of parquet flooring with beautifully figured and coloured woods can now be obtained at a reasonable cost.

But the object of this article is to give a general survey of the newer materials that are being employed. Jointless flooring is one of the most popular of the newer floor materials. Being composed largely of sawdust mixed with magnesite, it could almost be termed a solid wood floor. Like all new products, it had its troubles in the early days, for if the materials were not properly mixed and laid cracks and other defects usually followed. With the experience gained, these troubles were overcome and the skilled men now engaged on this class of work can produce a floor which will remain durable and perfect in every way.

This floor can be produced in various colours by the addition of coloured pigments. For light floors a light sawdust forms the aggregate, and dark sawdust is used for the red and other dark colours. Some firms use what is called wood flour, but generally the floor is about the same in colour and durability. It is resilient but not so warm as a wood floor, and although suitable for living rooms and offices it is not advocated for bedrooms unless carpets or a plentiful supply of rugs are in use. Taking a high polish, this floor is easily kept clean with a mop and polish. It is vermin- and water-proof, and can be laid on wood, stone or concrete sub-floors and is specially valuable for covering old and worn wood floors, staircases, etc. Properly laid it is very durable, and one floor laid in a demonstration house gave no sign of wear after over 150,000 persons had passed over one narrow strip. The success of this class of flooring has introduced a variation in the form of a non-magnesite composition parquet flooring. The blocks are machine-pressed to a standard size of 6 in. by 2 in. by ⅝ in., and coved skirtings can be obtained. The standard colour resembles natural oak, and as the tint varies in the making a pleasing effect is obtained in the finished floor. Other colours can be supplied, such as mahogany, red, purple, green, brown, etc., which can be used as borders or for the production of any pattern or colour scheme. Laid exactly in the same way as tiles with a floating of cement and sand, any practical tiler can produce satisfactory floors. They are specially suitable for schools, public halls, or where hard wear is involved, and, like the jointless floor, are warm, resilient, and will polish well. When using magnesite floors one point must not be overlooked, and that is, iron pipes must not be in direct contact with the flooring, otherwise corrosion is liable to take place.

Stone flags are to be found in country cottages, but the modern production is a stucco similar in grain to stone, with its texture, durability and colour. Caen, Bath, Portland, Darley Dale, and Runcorn Red can all be reproduced, and stucco can be applied to brick, stone, concrete or timber.

Rubber is a material that is being largely used for flooring. It is supplied in various designs and colours, and although made up of many interlocking pieces the whole area is eventually firmly locked into one covering. Interlocking tiling is watertight, and in use the joints become more solidly locked, and no trouble is experienced with joints or movements when once properly laid.

With rubber the floor covering can be in harmony with the character of the building and can be produced in bold designs for a large area in artistic harmony with the general scheme of decoration.

There are few comforts more essential in a hospital than silence; indeed, perfect quiet subscribes as much as anything towards the recovery of the patient, and in such cases a rubber floor is a great advantage. Being impervious to damp, rubber is easily kept clean, and is very comfortable to walk upon, and altogether makes an excellent floor.

Cork has been used for a variety of purposes and is familiar as a floor covering in the form of cork lino. It is now being supplied in the form of parquet flooring from ⅜ in. to ¾ in. thick, compressed into blocks, and when laid is stated to wear as well as oak. Naturally warm, it is resilient to the tread and is easily kept clean with soapy water, or smoothed and polished with wax in the same way as a wood parquet floor.

Asphalt has been largely used in factories and warehouses, but its colour has not been in

its favour as a flooring material in other classes of buildings. It is now possible to obtain it in a variety of colours and laid to various coloured patterns in the same way as the magnesite flooring. It is very durable and impervious to damp.

Granolithic and cement floors are well known. With the introduction of permanent colouring pigments the colour objection no longer holds good, provided these pigments are obtained from a reputable firm, otherwise the action of the cement is liable to give a colour other than intended.

Ground floors constructed of timber have to be kept clear of the ground with a ventilated air space, the site generally being covered with concrete. If, however, a solid floor is required, such as woodblock on concrete, or granolithic on concrete, it is usual to lay this concrete direct upon the prepared ground or hardcore, the floor covering of wood, etc., being placed directly upon the concrete with a suitable damp-proof material interposed. In some parts of Scotland a new regulation has come into force which enacts that all such solid floors shall now be kept above the ground and shall be provided with a ventilated air space not less than 9 in. The ground can be covered with hardcore, gravel, etc., with a tarred surface. At first sight this seems a useless regulation, but upon consideration it is seen to be a step forward in the production of a perfectly dry ground floor, and one that will not rot. The trouble the early builders experienced was the removal of the timber shuttering which necessitated the provision of a space under the floor large enough for a man to work in. This difficulty has now been overcome by the use of the Lewis dovetail sheeting, which acts as a centering and reinforcement, thus allowing for the minimum air space, quick construction, and the prevention of any damp arising.

ECONOMIES IN CONCRETING

WRITING to an American architectural journal recently, the head of one of the biggest contracting organisations in the United States said: "With us concreting is now becoming more of an exact science than a haphazard throwing together of materials in proportions handed down to us by our ancestors. . . . The rote of 1:2:4, or any other such proportioning, has gone by the board, and we are now realising that the best way is to specify concrete by the proportion of cement to water only, letting the rest of the materials take care of themselves." To one unacquainted with developments in the design of concrete mixtures in the United States such a statement is almost unintelligible, but nevertheless it accurately reflects the trend of opinion amongst concrete specialists. As a result of over 100,000 tests, Professor Duff Abrams, Head of the Structural Materials Research Laboratory at the Lewis Institute, Chicago, came to the following conclusion: "The reason why a rich mixture gives a higher strength than a lean one is *not* that more cement is used, but because the concrete can be mixed (and usually is mixed) with a water ratio that is relatively lower for the richer mixtures than a lean one. If advantage is not taken of the fact that in a rich mixture relatively less water can be used, no benefit will be gained as compared with a leaner mix. The mere use of rich mixes has encouraged a feeling of security, whereas in many instances nothing more has been gained than the waste of a large quantity of cement due to the use of an excess of mixing water."

It has become the custom to refer to American methods as being far ahead of our own without justification in many instances, but there is no doubt that we have much to learn from that country on the subject of concreting.

Water Content.

Since the tests of Professor Abrams the theory of the effect of water content on the strength of concrete has been put to practical use, with beneficial results as regard strength and cost. The exact quantity of water which gives the strongest concrete is very small, so small, in fact, that it can hardly ever be used in practice. That being so, it will be realised that the object should be to use as little water as possible consistent with the work in hand. In pre-cast work it will often be possible to use nearly as little water as will give maximum strength, but in reinforced work it is essential that the material should flow under and around the reinforcement in order to give a sound job.

A considerable amount of attention has been given to this question in this country by Dr. Oscar Faber, O.B.E., D.Sc., whose rule for calculating the amount of water required is to take 28 per cent. by weight of the cement, and add 4 per cent. by weight of the sand and ballast. This will give the weight of water required to give a good working mix when the sand and ballast are dry and non-absorbent. In the case of absorbent materials, such as broken brick, the absorption of the materials should be ascertained and a corresponding quantity of water added. Where the materials already carry moisture, such as when they have been left uncovered in rain or used immediately after being dredged or washed, the amount of added water must be reduced in proportion. In the following table is given the quantity of water recommended by Dr. Faber for different concretes. The table is for use with dry and non-absorbent materials, and adjustment must be made when these conditions do not occur:—

QUANTITY OF WATER FOR REINFORCED CONCRETE

Mix.	Water. Lbs. per bag of Cement.	Gallons per bag of Cement.	Gallons per cu. yd. of Sand and Ballast.
1:4:8....	152	15.2	15.4
1:2:4....	104	10.4	21.1
1:1:2....	80	8.0	32.4

The cement is measured by weight, and in the above table is taken as weighing 90 lb. per cubic ft.; sand and ballast are also taken as weighing 90 lb. per cubic ft.

It has been proved that for every concrete mixture there is a certain definite amount of water which produces maximum strength, and that any variation from this quantity, either more or less, is accompanied by a considerable decrease in strength. The quantities of water given in the above table are considerably in excess of the exact quantities necessary for maximum strength, but will be found to be as near as can be reached under the practical difficulties of pouring concrete around reinforcing rods. In mass concrete work there is much more possibility of attaining the ideal consistency, and the object should be to use as much water as is necessary to allow the chemical action of the cement to take place, and no more. Such a concrete will be so stiff as to be more difficult to handle, and therefore more costly to place; but if tests are made it will be found that with a stiff mixture the same strength can be attained with less cement than a wet mixture, and the saving in cement will more than offset any extra cost of handling.

Grading.

As a general rule it may be said that the strongest concrete is that containing the least voids, and apart from the better concrete produced the grading of aggregates to produce the densest mass allows of considerable economy in cement. By careful grading a 1:5 mix may be as strong as a 1:3 mix in which the materials have been carelessly graded.

The following table gives the proportions necessary to produce concrete with a compressive strength of 2,000 lb. at 28 days:—

Size of Coarse Aggregate.	Proportions of Materials. Portland Cement	Fine Aggregate.	Coarse Aggregate.
¼ in. to ¾ in.....	1	1.9	2.3
¼ in. to 1 in.....	1	1.8	2.9

Mixing.

The period of mixing has a very important influence on the strength of the concrete, and also increases the workability of the material. For instance, 28-day tests on concrete mixed for one minute have given a compressive strength of 911 lb. per sq. in., while similar specimens mixed for two minutes have given a strength of 1,243 lb. per sq. in. at the same age. Mixing for further periods up to ten minutes has been shown to have practically no effect in increasing the strength above that obtained with a two-minute mix, the greatest increase being imparted to the material between one minute and two minutes after the water is added. It will thus be seen that batches should always be turned over in the mixer for at least two minutes, and where the machine is not fitted with an automatic device to control the length of the mix, particular care should be taken to ensure that this part of the work is not scamped.

It is found that maximum strength is obtained if the materials are first mixed dry until they are of uniform colour, and the water then added (while the drum is still revolving) and mixing continued for a further two minutes.

Quality of Water.

It sometimes happens in outlying districts that considerable expense is entailed in obtaining supplies of fresh water for concrete mixing, although there may be a readily accessible supply of water in the neighbourhood which is rejected because it is impure. Many specifications reject any except fresh water for concrete mixing, but recent tests on a number of impure waters show that in many cases the detrimental effect on concrete is so slight as to be negligible or easily replaced by the use of a little more cement. Water containing refuse from many factories, such as oil refineries, breweries, soap works, etc., has no deleterious effect on concrete whatever; while bog water and water from rivers contaminated with sewage only reduce the strength of the concrete with which they are made by 10 per cent. Unless clean water can be readily obtained it is always inadvisable to use polluted water, but it will be seen that it will often be cheaper to use polluted water and increase the proportion of cement than to go to great expense to get supplies of clean water. As with concrete made with fresh water, concrete made with impure water will increase in strength by 1 per cent. for every 1 per cent. addition to the quantity of cement, so that concrete made with water contaminated by sewage will be as strong as though it were made with fresh water if the cement content be increased by 10 per cent.

THE BUILDING EXHIBITION

OPENING CEREMONY

The opening ceremony at the Building Trades Exhibition was performed by the Lord Mayor of London on Wednesday under the chairmanship of Mr. E. Guy Dawber (President of the Royal Institute of British Architects), and before a numerous gathering.

In introducing the Lord Mayor, Mr. Dawber said the exhibition was organised entirely in the interests of the building industry, and architects, engineers and builders, and, in fact, all concerned with building, would find it full of interest. It was singularly appropriate that the exhibition should be formally opened by the Lord Mayor, who was the first Lord Mayor of London directly connected with the building trade. He congratulated Mr. Greville Montgomery on the success of the exhibition, each of which proved to be more successful than its predecessor.

The Lord Mayor said it gave him great pleasure to be present on the occasion. It was a very fine exhibition. His first recollection of the Building Exhibition went back thirty years, when it was held at the Agricultural Hall. That exhibition was organised by the present management, and every building exhibition since, each better than the one before, had been organised by the present authorities. No doubt the exhibition he was opening was on the same lines as previous exhibitions, but there had been no previous year in which so much care and attention had been devoted to it. He was given to understand that the exhibition covered an area of 200,000 superficial feet, occupied by 300 exhibitors. It was a great feat on the part of the organisers to have been able to accomplish so much with such wonderful results. All those connected with the building industry, or in any way interested in building—whether they wanted a house or whether they had one—should take an opportunity of looking round the exhibition to see what they might have in the way of improvements, whether for the house of the present or for the house of the future. Of the exhibits to be seen he believed most attention would be attracted by those which appealed to those who wanted a house, such as the stands which showed new methods of house building, about which there had been, and, unfortunately, still was, some controversy. He thought they should bear in mind that the great thing at the present time was to get houses, whatever the method or materials, and whether people preferred this or that or the other method it was essential that all concerned should put their shoulders to the wheel to produce the houses. In order to compare the various types of house it would be necessary for the public to visit the exhibition. To produce houses in sufficient numbers the local authorities and the Government should combine to provide the means, and then all connected with the industry should help to carry the scheme to a satisfactory conclusion, and get rid as soon as possible of the bugbear of the housing question. They had heard of many new methods of construction, such as the "Butt and Ben" cottage, which had proved of great value in Scotland and the northern parts of England, and might be equally valuable in the south; he hoped there would not be such opposition to that type of cottage as had been experienced in the case of the steel house. The building trade operatives particularly should be impressed with the fact that they must take their part in helping the community to get the houses so badly needed. Neither the method of construction nor custom should be allowed to hinder house building, nor should any of the narrow interests of any section of the regular building trade be allowed to stand in the way of what was undoubtedly wanted in order to lead to the construction of houses. There must be the strong co-operation of the Government, the local authorities, the building trades, and all concerned with the production of houses. In his opinion the builder was out to do his best, and would supply anything that was wanted, from his expert knowledge and ability, to build what the people wanted. It seemed that to a very great extent the difficulty simmered down to the necessity for an effort on the part of the operatives to see that their duty to themselves and to the community at large was to lend a hand in solving the problem. Members of Parliament, and all who had to deal with the housing question, should visit the comprehensive display of everything necessary for houses to be seen at the exhibition.

Sir Kingsley Wood (Parliamentary Secretary to the Ministry of Health) said he was present to express the interest of the Government in the exhibition, and to thank the building industry for all it had done in connection with the housing of the people, and if possible to encourage the industry to still greater efforts. Before he left the Ministry of Health that morning he got the latest figures, and he found that since the war the total number of new houses in this country up to March 1 last was no less than 602,724—a really remarkable record, exceeded by no other country in the world. And it was a very interesting thing to observe that of those 600,000 odd houses not less than 374,418 had been built by private enterprise. They were very grateful indeed to the local authorities, who had played their part in connection with the housing schemes, but there was no doubt that, speaking generally, the greatest assistance had been given by private enterprise. Last year were built the largest number of houses that had ever been built in one year in the history of the country. No less than 159,026 were erected, and of these private enterprise was responsible for 126,937. This year they looked forward to a still bigger record. There were only two factors that might falsify that hope. One, of course, was the possibility of a great industrial stoppage, which would have the greatest possible effect on the housing of the people. The second factor was that the houses must be supplied at a reasonable price. The Lord Mayor had emphasised, and quite rightly, the great need that still existed. Although they had achieved a record in house building there was a great deal to be done. Every Member of Parliament could speak from experience in his own constituency, where there were long waiting lists of people wanting houses, of the great need for housing accommodation, and there was also the problem of the slums which had still to be tackled much more

Photo: Tella Co., Ltd.

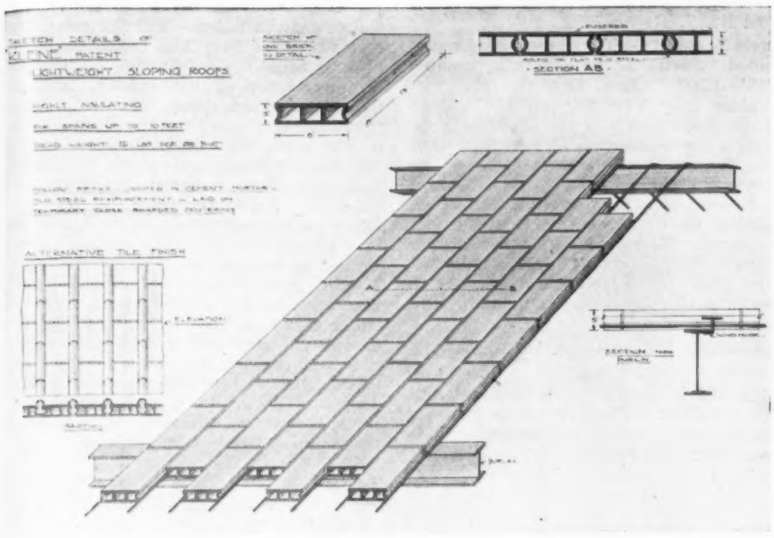
The Opening Ceremony.

Photo: Tella Co., Ltd.

The Opening Luncheon.

Photo: Farringdon Photo Co.

The Lord Mayor and Sir Kingsley Wood, M.P., at "The Builder" Stand.



New Type of Roofing shown by the Kleine Patent Fire-Resisting Flooring Syndicate, Ltd.

vigorously than had been attempted in the past. All that depended upon future housing programmes, and he was very anxious, on behalf of Mr. Neville Chamberlain and himself, to say how they welcomed that aspect of the exhibition which showed new types of houses. He hoped the people of London and the provinces would visit the exhibition in large numbers to see those new types of houses. There was, of course, a good deal of prejudice against them. The people of this country were conservative enough to look askance at anything except brick houses, but if substantial progress was to be made in housing during the next twelve months to help the people who had waited so long, they had to turn more and more to new methods of construction. The building trade at present had sufficient orders to keep it occupied for a very long time indeed, and under those circumstances if they were to make progress they must turn to new methods. It was very interesting to note that last year in this country 25,000 houses were built by new methods of construction, and they wanted to have still more houses of that type built. Whether those houses were good or not, the Government wanted the public to decide for themselves; they were quite content to allow the women of the country to decide the point. So far as the experience of the Ministry of Health was concerned, there were already many thousands of people living happily and comfortably in new types of houses. He wished every success to the exhibition, and congratulated the organisation on the excellent display.

A vote of thanks to the Lord Mayor and Sir Kingsley Wood, moved by Mr. Guy Dawber and heartily accorded, terminated the proceedings.

The Luncheon.

After the luncheon which followed, LORD SAYE AND SELE proposed the health of Mr. Montgomery, who, he said, was one of the greatest benefactors of the building industry and the country as a whole. They could not do him too much honour for what he had done for architecture and building in the past.

In responding, MR. MONTGOMERY recalled the story of the builders' foreman at a luncheon given to those who had taken part in the erection of a building. Replying to the toast of his health, the foreman said: "I don't know anything about replying to healths—my proper place is on the scaffold!" Continuing, he said, he was very glad to be able to welcome so many of his friends, among whom he saw some who supported the first building exhibition held at the Agricultural Hall thirty years ago. In those days they had a great struggle to get an exhibition together at all, and there were all sorts of things, such as shooting galleries, sweetstuff stalls, india rubber ball stands, and on one occasion there was even a row of hansom cabs to fill space because, he presumed, Hansom the inventor of the cab * was interested in architecture. In conclusion, he recalled the story of two undergraduates who were invited to a high-brow dinner. The hostess asked one of them whether he liked Botticelli. "Yes," he said, "I like Botticelli very well, but I prefer chianti," and on meeting outside the house the other undergraduate taxed his friend on the matter: "You have dropped an awful brick," he said; "Botticelli is not a wine—it is a cheese!"

Building Exhibition £100 Essay Prize.

The promoters of this year's Building Exhibition are offering a prize of £100 and four valuable books dealing with architecture as consolation prizes, for the best essay on "My Impressions of the Building Exhibition, 1926." The following gentlemen will act as judges:—Messrs. E. Guy Dawber, P.R.I.B.A., H. S. Goodhart-Rendel, President A.A., and J. C. Square, President Architecture Club, whose decision must be accepted as final.

Essays, which must be typewritten, are not to exceed 2,000 words, and must be delivered to the office of the Building Exhibition, 43, Essex-street, Strand, W.C.2, on or before May 30. Each essay must bear a *nom-de-plume* and not the name of the competitor. The *nom-de-plume* and the name and address must be placed in a separate envelope accompanying the essay. Only *bona-fide* architectural and building students in the United Kingdom who are connected with a trades school, polytechnic, or university are eligible to compete. Intending applicants must apply for a form to Mr. H. G. Montgomery (Hon. A.R.I.B.A.), 43, Essex-street, Strand, W.C.2, upon which to enter their name, age and school.

[* We may add that Hansom was also the founder of *The Builder*.—ED.]

Arrangements at the Building Trade Exhibition.

Saturday, April 17.—Visit of Institution of Sanitary Engineers.

Tuesday, April 20.—Visit of Institution of Structural Engineers.

Wednesday, April 21.—3 p.m.—Lecture:—"Substance, Form and Colour in Concrete," by Mr. Frederic Coleman. Chairman: Mr. Ralph Knott, F.R.I.B.A.—Visit of Society of Estate Clerks of Works.

Thursday, April 22.—Visit of London Master Builders' Association.

Friday, April 23.—Visit of the London Society.

Saturday, April 24.—4 to 6 p.m.—"At Home" to Members of the R.I.B.A. and A.A. 4.30 p.m.—Meeting of Association of Architects', Surveyors' and Technical Assistants.

Monday, April 26.—6.30 p.m.—Lecture:—"Old London Bridge—Peter Morris and his Water Wheel," by Mr. Herbert A. Cox. Chairman: The Rt. Hon. Sir William Bull, M.P.

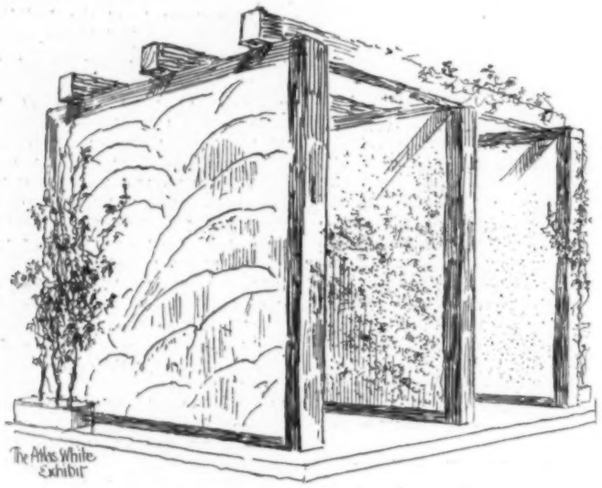
Tuesday, April 27.—7 p.m.—A.A.S.T.A. Lectures:—"Concrete Construction and Design." "Central Heating of Large Buildings." Chairman: Mr. E. Fiander Etchells, Hon. A.R.I.B.A., A.M.Inst.C.E.

One of "The Builder" Stands.

THE STANDS

Adamite Co., Ltd. (REGENT HOUSE, REGENT-STREET, W.1). **Stand No. 95, Row E.**

White Cement.—The possibilities of white cement were practically unknown to architects in this country before "Atlas White" cement was brought to their notice a few years ago. Now it is being extensively used by leading architects, with what excellent results may be seen on this stand. Perhaps the finest effects are obtained with stucco finishes, and it is on these that attention is concentrated. The Adamite Company has made a special study of coloured sands for this purpose, and prove to the visitor that there need be no monotony whatever in any concrete building if the surface is treated as advocated here; on the contrary, we see textural finishes in a variety of delightful colours and shades which vie with any of the traditional methods in beauty and craftsmanship. There is nothing mechanical about the process; the surface is as left by the plasterer, who has been taught many new finishes obtainable by a twist



of the wrist which were unknown to the craft before, but are in every respect as effective and spontaneous as the traditional methods. Four of these finishes are shown, each with individuality and each in different colours. These are the finishes used on so many of the American stuccoed houses which have been so much admired when illustrated in this country, and here we are able to see that they are as good in reality as they appeared in the photographs. Another product of the firm, "Colemanoid" concrete waterproofer and hardener, is also exhibited, together with illustrations of some of London's largest buildings in which it has been used, such as Selfridge's, Carmelite House, Liberty's, Dickins & Jones, and Swan & Edgar's buildings.

D. Anderson & Son, Ltd. (ROACH-ROAD WORKS, OLD FORD, E.3). **Stand 112, Row F.**

Roofing.—Among a number of interesting exhibits on this stand, it is probable that attention will first be directed to "Stablex," which is a newly patented protective coating of stabilised bitumen. Instability is one of the drawbacks to bitumen, and in this new compound the firm claim to have overcome this. It is shown as a dressing for treating damp walls, while a brick tank lined in "Stablex" also shows its value as a vertical damp course. The stand represents a brick building covered with "Rok" roofing, the new "Rok" mineral surface roofing, and "Rok" Flextile shingles. The woodwork is treated externally with green "Sidol" preservative, while the interior woodwork is stained in various shades. In the forecourt walling is shown the "Basite" damp-proof course. On the stand also are other types of roofings and lining felts. The verandas have models of a "Belfast" roof and a flat "Rok" roof.

Australia Concrete Machinery & Engineering Co., Ltd. (PORDON-ROAD, BRIXTON, S.W.). **Stand No. 7, Row B.**

Concrete Machinery.—The simply and strongly constructed "Australia" block-making machine and "Tonkin" mixer have become well known since they were put on the market five or six years ago, and are again on view with several improvements. A new product of the firm, also on view, is a cube mixer of the rotary type, in which the aggregate is thrown from one cube face to another six times to each revolution of the drum; a very thorough mix is thus ensured. The machine is supplied in sizes from 3 cubic ft. to 21 cubic ft., with or without a power unit. Steel concrete carts and a machine for making slabs with tongue and groove ends are also shown.

Bath Artcraft, Ltd. (BATH). **Stand 173, Row J.**

Joinery.—In keeping with its business, this firm has provided a stand which is itself an example of modern design, both in construction and decoration. In two bays in the stand are shown pairs of double spring folding doors of simple design but fine finish, illustrating how simple design may be effective. In another bay is a section of counter with a shaped front. Within the stand are specimens of fibrous plaster decoration, of Grinling Gibbons carving, and furniture.

Bell's Poilite & Everite Co., Ltd. (SOUTHWARK-STREET, S.E. 1). **Stand No. 257, Row Q.**

Asbestos-Cement Products.—One of the most commanding stands in the exhibition has again been erected to display the "Poilite" and "Everite" products in asbestos cement. One of the pioneer firms in the industry, Messrs. Bell's, show a very wide range of sheeting, slates, tiles, &c. A lofty structure supports a roofing of corrugated sheeting, the imperviousness of which is amply demonstrated by a continual fall of water on the sheets without any sign whatever of percolation. Roofing materials in sheets, tiles, and slates in various patterns and sizes are displayed in profusion, and give an excellent idea of the colour effects possible by their use and also afford a practical demonstration of the method of fixing. A new product of the company, shown here for the first time, is a rubber floor tile in the composition of which is incorporated a proportion of asbestos cement. The tile has all the resiliency of rubber flooring, is available in different colours, and its resistance to abrasion may be tested by the visitor. The development of the asbestos-cement industry is shown on this stand by the exhibits of smaller fittings, such as rainwater goods, sinks, cisterns, pipes, made of the material; these goods are very much lighter than the usual cast-iron, and have the further advantage that they do not require periodical painting. They have been approved by the Ministry of Health for use in housing schemes, and as their advantages are becoming more known they are being more extensively used.

Blundell, Spence & Co. (9, UPPER THAMES-STREET, E.C.4). **Stand 260, Row Q.**

Paints and Varnishes.—Manufacturers of paints and varnishes have the advantage of being able to make the brightening of their stands an integral part of their exhibit. This is well illustrated on this stand, the effects obtainable with the firm's well-known products being a delight to the eye. Specially prominent among the decorative materials shown is "Pammel" petrifying liquid enamel, a bright drying finish for walls, woodwork, or metal. The firm's transparent petrifying fluid, also shown, is a preservative for walls against damp and for use on new plaster. For external use there is "St. Paul's" liquid paint, and for highly decorative work a super-enamel, "Japonette," either glossy or flat. A finishing paint with exceptional gloss and durability is worthy of note, as is also the firm's aluminium galvanising paint, which is heat resisting, and is intended for metal work. In varnishes there is a full range for the requirements of painters, decorators, coach builders, and others.

Boulton & Paul, Ltd. (135, QUEEN VICTORIA-STREET, E.C.4). **Stands 295 and 125, Rows T and G.**

Joinery.—Among the numerous activities of this firm is the manufacture of standardised joinery, and a diversity of examples of this may be seen on this stand. In general the items displayed are doors, windows, and mouldings of the kind employed at the present time to such a large extent in housing schemes and for villas, bungalows, and so forth. The doors shown are in mahogany, oak, and deal, and with from three to nine panels. Mass production of these goods has enabled the cost to be brought quite low, while the work is of a high standard. In addition to this made work, there is a full exhibit of stock mouldings.

Brilliant Sign Co., Ltd. (38, GRAY'S INN-ROAD, W.C.1). **Stand No. 176, Row J.**

Signs.—Having secured an excellent position on an island site in the centre of the Main Hall, this firm is using it to the best advantage, exhibiting a full range of "Brilliant" signs and letters such as have become extremely popular for fascias, hanging signs, and so forth. Especially there should be noted the new "Day and Night" double-purpose letter. Specimens of the firm's new "Durasign" are to be seen, as also many examples of bronze and metal sash bars, caps, and bases for shop fronts.

British Fibrocement Works, Ltd. (CENTRAL HOUSE, KINGSWAY, W.C. 2). **Stand No. 136, Row G.**

Asbestos-Cement Products.—This stand concentrates on the display of asbestos-cement slates and sheets, both flat and corrugated, which are the specialities of the company. A series of roofs shows the great variety of pleasing effects obtainable from the selection of "Fibrent" materials in harmonious shades and they are obtainable in any desired colour or shade. The corrugations impart very great strength, as is shown on the centre span where sheeting with 5 in. corrugations is used; this material is specially designed so that it may be laid without mitreing at the laps. No less than eight other roofing slopes display sheeting with smaller corrugations, together with slating in duchess, straight, and diagonal patterns in grey, blue-black, purple, red, and brown. The fact that this type of sheeting is also supplied flat considerably adds to its usefulness. The flat sheets make an excellent ceiling which does not need plastering, as may be seen on the stand and many attractive panelled effects are possible. An interesting process of roughcasting is demonstrated, as also is the use of asbestos-cement flat sheets, ¼ in. thick, for flooring; the sheets are nailed direct to the joists, and entail considerably less labour than wooden floors.

Bratt, Colbran & Co. and **The Heaped Fire Co.** (10, MORTIMER-STREET, W.1). **Stand No. 213, Row L.**

Heating and Cooking.—The fireplaces for which this firm is well known are to be found on this stand, and the display is an impressive

one, which should not be missed. Though specialising in fine work, the firm does not neglect the less expensive designs which are required for the smaller class of residences. A number of these small and inexpensive models are exhibited, and it will be noted that good design and finish and quality of material have in no way been sacrificed in the effort to keep the price within the limits necessary for this class of work. The "Heaped" fire has become very popular in recent years; it will be noted at this stand that moderately-priced suites embodying all the advantages of the heaped fire construction are now made available for residences of the smallest dimensions, as well as for the big houses. Some of the models for the larger residences have exceptional artistic merit.

Stand of Messrs. Bratt, Colbran & Co.

British Steel Piling Co., Ltd. (54A, PARLIAMENT-STREET, WESTMINSTER, S.W.1). **Stand No. 305, Row V.**

Plant.—Two sizes of the well-known "Wonder" concrete mixers are on view, the No. 3 and No. 4. The No. 3 machine has a capacity of 3½ cu. ft. of mixed materials per batch, and is fitted with a 2 h.p. petrol engine. The No. 4 machine has a mixed batch capacity of 5 cu. ft., and is fitted with a side loader, automatic water tank, and petrol engine. Another useful item of plant on this stand is the "Wonder" hoist, which has a lifting capacity of over 1,500 lbs. at 100 ft. a minute; power is from a 6 h.p. petrol engine. These machines are favoured in many quarters because of the excellent engines with which they are fitted; not only are they extremely reliable under bad conditions, but they have a very low petrol consumption, which is helped by the drum being fitted with ball bearings, and consequent minimum of friction. The hoist has such a great capacity that it is not often that it would be constantly at work, and to meet this case the engine is so fitted that when not required for the hoist it can be used for operating any other item of plant by a belt drive.

Bryce, White & Co., Ltd. (28, WHARF-ROAD, N.1). **Stand No. 146, Row H.**

Timber and Joinery.—A selection from the large assortment of joinery always kept in stock by the firm is exhibited, including doors in Western pine and Swedish redwood, mouldings in great variety, garage doors and gates, dressers, flooring, matchings, &c. The doors should have a special appeal to those concerned with supplying good quality woodwork in housing schemes; they are free from knots and defects, with solid rails and stiles and rotary cut figured panels, and are excellent for staining or polishing. The Swedish redwood doors are of the well-known "Castle Brand," which have been imported by the firm for many years; these are available in a wide range of patterns. Some good shapes in mouldings are to be seen from stock, while any special design is worked in the firm's own mills. All the items shown on the stand are available for immediate delivery.

"The Builder, Ltd." (4, CATHERINE-STREET W.C.). **Stands No. 118, Row F, and No. 232 Row N.**

Publications and Models.—At stand No. 118, Row F, there are reception rooms; a display of books of interest to the architectural, building and allied professions; models of "Old London Bridge," "Old St. Paul's," "Mill Lock" (the recently discovered second arch of Old London Bridge), and a new model, just completed, of "London's First Water Works," showing in particular Peter Morris's water-wheel; also models of houses with three and four bedrooms made from the winning designs in *The Builder* Cost of Building Competition. The other stand, No. 232, Row N, situated just inside the new Hammersmith-road entrance, has a full display of *The Builder, Architecture*, and other publications issued from *The Builder* Office.

A lecture, entitled "Old London Bridge—Peter Morris and his Water-Wheel," illustrated by lantern views specially prepared, and the new model of London's First Water-Works, will be delivered by Mr. Herbert A. Cox, F.C.A. (author of "Old London Illustrated), in the Lecture Hall, at 6.30 p.m., on Monday, April 26. Chairman: The Right Hon. Sir William Bull, Bart., K.T., M.P.

Builders' and Contractors' Plant, Ltd. (11, VICTORIA-STREET, WESTMINSTER, S.W.1). **Stand No. 247, Row P.**

Plant.—A large variety of contractors' plant is on view on this stand, including hoists, mixing and placing plant, centrifugal mixers, barrows, portable turntables, conveyors, asphalt plant, pumps, and scaffold lashes. The "Exe" hoist is well known, and the latest model has an improvement in the form of controls for operation from ground floor level or from any other floor as desired; the same plant is also shown adapted for double barrow loading, and has improved discharge facilities at any floor. The feature of the firm's distributing plant is that the material is not run through chutes but carried on belt conveyors, which avoids any danger of the materials becoming separated between the mixer and the forms; the plant is available in sizes ranging from an output of 30 cu. yds. an hour to 30 cu. yds. a day.

Walter Carson & Sons (GROVE WORKS, S.W.11). **Stand No. 198, Row K.**

Paints and Varnishes.—Paint for all purposes forms the bulk of the exhibits on this stand. There is the well-known "Coverine" undercoating, which transforms black into white in one coat; again, there are two score shades of "Muraline" washable water paint. A brilliant and glossy paint for high-class interior work is "La Belle" enamel. In powder form to mix with the firm's special oil mixture there is an anti-corrosion paint, which is especially adapted to withstand sea air. For cases where a quick-drying, hard gloss paint is required there is a ready-mixed variety. For radiators and interior metal work there is a metallic paint and for the preservation of iron and steel, particularly where exposed to destructive gases, there is supplied a graphite paint. These are but a few of the items exhibited. Among the many others may be mentioned "Vitrolite," a white paint for greenhouses and general decoration; "Muraprime," the priming for Muraline and other distempers; "Matamure," a matt finish wall paint; fifty-four shades of liquid paint, and enamels, furniture cream, and so forth.

Cayless Bros. (BATTERSEA PARK-ROAD, S.W.8). **Stands No. 159, Row H and 203, Row K.**

Ladders.—Two stands are in possession of this firm, one in Row H and one in Row K. The latter is entirely devoted to showing the house decorator how to reduce his scaffolding costs by using the "Quick-Fix" ropeless scaffolding for both inside and outside work The system consists of standards, with steel brackets, braced with scissor braces and with angle-iron bearers secured by hook bolts. Demonstrations are given showing the simplicity and rapidity of erection, and the builder faced with problems of rush jobs, store space, and small entrances will note these displays with interest. The other stand shows ladders, trucks, telescopic towers, barrows and builders' plant. Notable among these exhibits is a special show of "C.B.B." telescopic ladders, utilising the grooveless truck, springless fool-proof lock and spring pulley cases which are the exclusive features of this production.

Cement Marketing Co., Ltd. (PORTLAND HOUSE, TOTHILL-STREET, S.W.1). **Stand No. 111. Row F.**

Cement.—"Blue Circle" and "Ferrocrete" rapid-hardening Portland cements and "Lightning" brand aluminous cement are shown on this stand by samples, and the results of many tests which are displayed testify to their quality. Emphasis is placed on the rapid-hardening Portland cement, which is being extensively used for purposes where speed of construction is essential. "Hydra-lime," a plastering lime which is supplied already hydrated, is also exhibited, as also is a section of the new "Vantage" hard court which absorbs water as readily as it is poured on it.

A. Cohen & Co., Ltd. (148-149, GREAT DOVER-STREET, S.E.1). **Stand No. 282, Row S.**

Bricks.—The A.C.O. two-in-one cavity face brick shown on this firm's stand is made of red clay, 9 in. by 9 in. by 2⅝ in. in dimension—*i.e.*, double the ordinary brick size, though its weight is only about half as much again as the normal brick. The cavities make it a non-heat and damp conductor, and it is claimed that it secures a perfectly dry wall. Obviously it effects a saving of time and cost in erection, as well as in weight and in mortar.

The Crittall Manufacturing Co., Ltd. (BRAINTREE). **Stand No. 153, Row H.**

Metal Windows.—Included in this exhibit are examples of (1) the Universal casement window, a type being used in modern London buildings, as at Vigo House, Adelaide House, Britannic House, Liberty's, Regent-street, Victoria House, &c. A loggia door in this section is also shown. (2) The Crittall standard metal window for domestic buildings. (3) A new range of standard windows for tropical use. (4) For factory and warehouse use one window is shown out of the series of standard sash windows. Though primarily designed for factory use,

these have been found suitable for various other applications, such as for schools and other institutions. (5) A bronze swing door forms one of the entrances to the stand, and other examples of architectural bronze-work are shown. The "Zincspra" rust-proofing process, by which steel windows are made permanently rust-proof, is demonstrated.

Davis Gas Stove Co., Ltd., and the Nautilus Fire Co., Ltd. (60, OXFORD-STREET, W.1). **Stand Nos. 301 and 302, Row V.**

Heating and Cooking.—Domestic fuel economy is the keynote of the stand occupied by these firms; whether in the domestic boiler, the gas range or cooker, geyser or coke grate, the apparatus makes an appeal from the point of view of economy. An exhibit which should be noted is the Nautilus welded steel coke-heated domestic boiler. This apparatus has a mild steel electrically-welded body, which will not fracture through excessive furring up or sudden variations in the tempertaure of the water. The ashes fall into an enclosed ash-pan and rotating fire-bars permit the fire to be clinkered out with the front and the top closed, so that there is no escape of dust or ash into the room. Another exhibit is the "Alpine" gas range fitted with an improved oven construction and a special air controller. The finish is in white porcelain enamel. Raised on legs or a stand a clear space is left for cleaning the floor beneath. Another cooker is the "Front-line," and there are also the firm's armoured gas grates, with fronts of hand-worked metal of superior finish. A working display of geysers includes several well-known popular models. Other items which should be noted are the Nautilus gas flues, consisting of hollow cast concrete blocks built in the thickness of a gas mantel register for carrying away the products of combustion; also the "Coquette" coke grate.

Doulton & Co., Ltd. (LAMBETH, S.E.1). **Stand No. 154, Row H.**

Sanitary Goods.—On this stand are shown sinks in white-glazed fireclay ware in different sizes, in both "Belfast" and "London" types, as well as the improved "Belfast," with its soap shelf included in the one piece of ware. Various patterns of w.c's for overhead or low-down cisterns are shown in earthenware and fireclay. The latest in lavatory basins will interest the builder, especially the "Glenholm," which has a wide, flat shelf between the taps. For factory or office purposes exceptionally strong basins of fireclay are displayed. Other sanitary apparatus are glazed stoneware pipes, gullies, and so forth. There should also be noted glazed ware materials for fireplaces and for exterior decoration. Finally, mention must be made of the attractive exhibit of rolled edge porcelain enamelled cast-iron baths, including the "Delphian," which is made specially for building into the wall.

Drew, Clark & Co. (LEA BRIDGE-ROAD, E.10). **Stand No. 195, Row K.**

Ladders and Scaffolding.—Specialists in ladders for three-score years, this firm have a very fine exhibit of this and kindred apparatus, all bearing the "Diamond" mark, which distinguishes the firm's goods. There are extension ladders of various heights and in two or three sections; patent scaffold trestles, platform steps, tower ladders, and staircase steps. Particularly noticeable among the exhibits is that of Higgs' and Drew's patent "Raprig" scaffold, which is made up in units, each unit allowing a stage or platform to be placed at any height up to 6 ft. 10½ in.; twice or more times this height being obtained by using two or more units. The whole of the wood is treated with preservative. This scaffolding is erected rapidly and requires no special skill to erect. It has also the advantage of being easily transported and light in weight. It is particularly useful for interiors and we hear that H.M. Office of Works has ordered large numbers of units for use in the big Government buildings.

Dry Rot and Fire Prevention Co., Ltd. (30, KING'S ROAD, N.W.1). **Stand No. 161, Row H.**

Wood Preservative.—This firm displays on its stand wood treated with "Toritna" placed in dry rot growths and demonstrating that its treatment renders them immune. This preservative is supplied in a considerable range of colours and wood stained in these colours simply and wax polished, varnished, French polished, and painted. This preservative is non-odorous and non-poisonous.

Educational Supply Association, Ltd. (171, HIGH HOLBORN, W.C.1). **Stand No. 292, Row T.**

Joinery.—This is an exhibit of "Esavian" folding and sliding partitions, windows and screens. One side of the display shows a circular window which can be thrown wide open, rendered possible by a patent sliding upright used. The top and bottom joints are rendered waterproof, the top being rebated while a water bar is provided at the bottom. One of the panes in each half is hinged and can be opened to permit of the exterior of the window being cleaned from the inside. At one end of the stand there is a garage door with the upper part glazed. This door can be quickly and easily folded to one side, when it occupies little space. At the opposite end of the stands is an ordinary glazed and panelled partition such as is used for dividing schoolrooms, and which has found a good deal of favour in hotels and restaurants. Removable cills are utilised to avoid floor obstructions, which would be objectionable where dancing takes place. On the fourth side of the stand is an adaptation of the "Esavian" partition by which two rooms in an ordinary house can be divided. A representation of a standard set of garage doors may be seen at the end of the stand; these doors are made on mass production methods and are consequently very reasonable in price.

Samuel Elliott & Sons (Reading), Ltd. (CAVERSHAM, READING). **Stands No. 181, Row J, and No. 248, Row P.**

Joinery.—Messrs. Elliott always gives us an admirable display of the high-class joinery for which they are noted, and this year is no exception. The exhibit takes the form of two rooms panelled in different woods, showing the beauty of some of the lesser-known, as well as the well-known, timbers. In one room the heavy posts supporting the solid beams are adzed, giving a charming old-world effect; all the panelling in this room is English oak. In the second room the panelling is of various types, a rich dark Australian Blackbean predominating over English elm. The opportunity is taken to show different wood floors, parquet and boards, doors, mouldings, and other joinery work. The twisted balusters of the staircase, the boarded-and-ledged entrance door, and the exterior walls of adzed English oak are admirably done, and the whole exhibit testifies to the excellence of modern craftsmanship when ably directed. On Stand No. 248, Row P, is exhibited a two-compartment revolving door in mahogany and various other woods and colours.

Elsan Manufacturing Co. (34, HIGH HOLBORN, W.C.1). **Stand No. 15, Row B.**

Sanitation.—For those whose residences are not connected with an effective sewage system, this company offers some amelioration. The Elsan chemical closet is a waterless system which depends for its action upon chemical disintegration and sterilisation. It is simple to set up and is adaptable to all climates and conditions. The sewage is treated chemically through agitation to ensure complete penetration of the chemicals and the liquefaction of all solids to render the flow free; at the same time the chemicals deodorise. There are two types of this closet, the portable and the permanent.

Evans & Ronald, Ltd. (7, DENMAN-STREET, S.E.1). **Stand No. 25, Row C.**

Ironmongery.—Several interesting items are to be noted on this stand, including the "Evron" barrel bolt and bullet catch, a spring bolt combination of the ball spring catch and the barrel bolt. A rustless spring is used. Another useful arrangement shown is the "Eddall" gate latch, which is easily fitted and has nothing to get out of order. For internal domestic arrangements there is the "Clip On" drainage board, which fits any size of sink, and a folding table, which requires no brackets, is instantly opened or closed and will take very considerable weights. Other exhibits are a new composition sand-faced roofing tile and a mortise night latch, with dead locking inside and outside.

Ewart & Son, Ltd. (346, EUSTON-ROAD, N.W.1). **Stand No. 189, Row K.**

Water Heating.—Experts in geysers and in water-heating systems generally, Ewart's are displaying a very full range of their products. All visitors at the stand will be interested in the "Califont" apparatus, a method of hot-water heating which is designed to ensure an instantaneous and continuous hot-water service throughout the house; only one heater being required, from which a hot-water service pipe can be taken direct to the bath, lavatory or sink. The opening or closing of the hot-water draw-off tap regulates the gas under the heater, obviously a recommendation to the housewife, for the gas is only full on when water is being withdrawn. Another geyser, the "Lightning," is a standard for bath and domestic use. It is a strongly-built apparatus and includes an automatic gas controlling valve and safety swing-out burner. A low priced reliable bath heater also shown is the "Victor," which produces hot-water very rapidly and conveniently. For houses where gas is not available, Ewart's manufacture geysers to be heated by paraffin, wood or coal. Particularly to suit the needs of new type houses, the "Crown" geyser has been produced; it is intended for fixing above the scullery sink. Among other items on this stand one may note the "Ever-Ready" boiler for restaurants; a selection of iron porcelain-enamelled baths, made by Saunders & Connor, of Barrhead; and the "Emperor" cowl.

Expanded Metal Co., Ltd. (YORK MANSION PETTY FRANCE, S.W.1). **Stand No. 142, Row G.**

Reinforcement.—From palatial public buildings to such utilitarian structures as retaining walls, "Expamet" expanded steel has been in use for many years as reinforcement for concrete in foundations, walls, floors, roofs, bridges, culverts, and other constructions where great strength is required. For roads the firm manufacture a treble layer reinforcement, which takes care of shear as well as tensional stresse. Other products of the company are light reinforcement for brickwork, blocks, and slabs, lathings for plaster, and wall ties. Specimens of all these are on view, and users will be interested to see the actual process of manufacture of the machine which has been installed on the stand, and which is working daily. A good idea of the important buildings in which this type of reinforcement has been used is gained from the display of photographs.

Fenlon & Son (Inc. G. Shrewsbury & Co.) (8, TUDOR-STREET, E.C.4). **Stand Nos. 27 & 28, Row C.**

Water Heating.—One of the problems of modern life is to suit the requirements of the dwellers in flats or small houses, while at the same time not occupying any more space than is necessary. To meet these requirements so far as hot-water supply is concerned, Fenlon's have introduced the "Two Point" geyser, a piece of apparatus which requires little piping or labour for fixing. It will serve the scullery sink with hot water, and when the tap for this purpose is closed will deliver hot water into the bath. The apparatus is displayed on the firm's stand, as are also many others of the special lines in which the firm deals, including various types of geyser, gas coppers, gas fires, porcelain-enamelled baths, gas-heated towel rails, and so forth.

Fernden Fencing Co., Ltd. (7, BRIDGE-STREET, GUILDFORD). **Stand No. 37, Row C.**

Fencing.—Fencing will be found in many styles on this stand. The exhibitors are makers of the cleft chestnut pale fencing which bears their name, and there are examples of this to

be seen. Of wooden fencing also there are oak park pale fences and others of the close-boarded variety. An economical fencing which may be seen on this stand is the Fernden chain link fencing, which is a robust and durable production and stronger and more suited to many purposes than the ordinary netting. Woven wire fences also form part of the exhibit, together with a number of patterns of entrance and wicket gates of the firm's special design and manufacture

John Fowler & Co. (Leeds), Ltd. (Steam Plough & Locomotive Works, Leeds). **Stand No. 38, Row C.**

Mixers.—The principal feature of the mixers shown by this firm is in the manufacture of the drum, which is constructed of two different metals with the object of obtaining the maximum strength without excessive weight; the centre section, which is subjected to the most wear and tear from mixing shocks, is a semi-steel casting, while the sides are of pressed-steel plates. The machines are in two standard sizes, one with a batch capacity of 7 cu. ft. and an output of up to 10 cu. yd. an hour, and the other with a batch capacity of 4 cu. ft. (mixed materials) and an hourly output of 6 cu. yd. Both sizes are fitted with the most up-to-date appliances, such as power loaders, automatic water tanks to control the water content of each batch, and a vibratory device attached to the loader which ensures that the load is rapidly and completely emptied into the drum without the necessity for scraping or hammering. They are mounted on road wheels complete with the power unit—a Petter petrol-paraffin engine. Either size machine may be fitted with a friction winch for hosting 10 cwt. at the rate of 50 ft. a minute, and a 5 b.h.p. engine, which enables the operations of mixing and hoisting to be carried out simultaneously.

Gas Light & Coke Co. (Horseferry-road, S.W.1.). **Stands 306–310, Row V.**

Gas and Coke Appliances.—Gas is being increasingly utilised for the service of mankind, as this large and varied exhibit convincingly shows. It includes a comprehensive display of gas and coke appliances for cooking, heating, and hot water supply, and of gas lighting fittings and switches. Gas fires are now obtainable in excellent "period" designs, and for this reason are being widely adopted in

The Stand of the Gas Light and Coke Company.

decorative schemes for which some few years ago they would have been thought unsuitable. Gas fittings are also produced in admirable designs, which accord well with a variety of architectural interiors. A feature of interest lately introduced is the gas switch, by means of which gas may be switched on as easily and conveniently as electricity. The display of practical appliances is one of considerable nterest.

J. Gliksten & Son, Ltd. (Carpenter's-road, Stratford, E.15). **Stand No. 89, Row E.**

Timber.—Some of the choicest specimens from the stock of one of the largest firms in the trade are to be seen here, where one gets an excellent idea of the very wide range of colour and texture in wood at the disposal of the architect. A special display is made of wainscot oak, American oak, mahogany, teak, and whitewood, all in first-class condition and with many beautiful grains. A feature of the exhibit is a log of Cuba mahogany, which, both in size and quality, is claimed to be the finest specimen in the country.

Goodwin, Barsby & Co., Ltd. (Leicester). **Stand No. 162, Row H.**

Plant.—With its manganese steel jaw-faces and sideplates, the 12 in. by 6 in. "Acme" stonebreaker has every appearance of a workmanlike crusher. It has been in use now for many years, and is portable. An exactly similar machine, but of lighter construction, is also shown; this is intended for breaking old concrete, bricks, &c., and requires very little power to drive. Either of these crushers are, if desired, fitted with screening apparatus for sorting various size stone, and may also be had mounted on a carriage complete with their power unit. The "Goodwin" mixer, of the open-drum type, is made in sizes from ½ to 1 cu. yd. capacity, with or without petrol engine or electric motor. One of the smaller size machines is on view, and is shown complete with hoist, measuring skip, engine, and all other accessories mounted on wheels. Another product of the firm, the "Springfield" concrete block-making machine, is also shown. This plant turns out a high-class hollow block, and is very strongly made.

Granwood Flooring Co., Ltd. (44, Bedford-row, London, W.C.1). **Stand No. 192, Row K.**

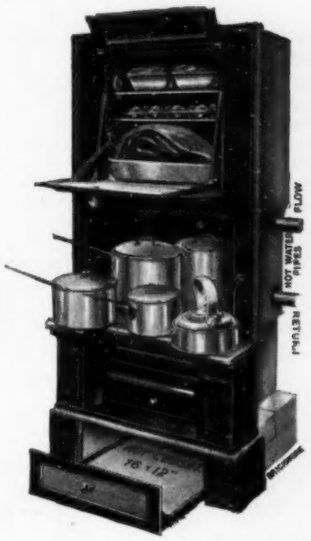
Flooring.—"Granwood" flooring blocks for laying on concrete or setting with cement and sand form the exhibit on this firm's stand. The blocks are noiseless and non-absorbent, and, for the latter reason, may be laid, if necessary, on green concrete. They are stocked in standard colours of light oak, dark oak, mahogany and black, and other colours can be made if desired. The exhibit also includes dadoes, cove skirtings, and trench covers, the last-named being used with the "Granwood" type of floor. The flooring blocks are very successful with the heated floors in open-air schools, sanatoria, and other such institutions.

Harvie Corporation, Ltd. (Broadway-buildings, Westminster, S.W.1). **Stand No. 128, Row G.**

Waterproofers. A range of products for waterproofing, hardening, and binding concrete and other roads is to be seen on this stand, each with its own special properties for special purposes, and some of them also imparting permanent colours. There is also a very light waterproof coloured composition flooring of a resilient cork-like nature, and a new coloured composition for surfacing lawn-tennis courts. A new product, a water paint for walls, concrete, roughcast, stucco, &c., is on view in eight colours.

The Interoven Stove Co., Ltd. (156, Charing Cross-road, W.C.). **Stand No. 222, Row L.**

Heating and Cooking.—The original "Interoven" stove which has proved so popular has an oven 20 in. wide, and this model finds a place on the Interoven Co.'s stand. But there is a demand for an interoven with a larger oven



The "Interoven" Stove.

than the 20 in. model, and yet less costly than the 35 in. super interoven. Therefore the company has produced the 24 in. "Super Interoven," and this new model, which embodies all the latest improvements ensuring easy flue cleaning, low fuel consumption and simple action. The large bread-baking oven will take a 20 lb. joint and the boiler heats a 40 gallon tank, giving plenty of hot water for baths.

The "Interoven" Stove.

It is also supplied with a hot closet (or under-oven) in the same way as is the 20 in. interoven. The 35 in. "Super Interoven" is also shown; it has many excellent features, including its appearance as a tiled register hob grate when converted into a sitting-room grate. Other items on this stand are the "Bewty" expanding barless firefront; the "Ten-in-one" adjustable stool bottom grates; and wrought welded range boilers.

G. Johnson Bros. (69, OLD-STREET, E.C. 1). **Stand No. 43, Row C.**

Shop Fittings.—This is a stand at which those who appreciate good taste in lettering will linger, and wonder why so much indifferent lettering is to be seen on every hand when such excellent shapes are available. Letters for signs of every description and size, and in a variety of materials and colours, are exhibited, from which the most discriminating should be able to make a satisfactory choice. There are also showcases, shop fittings and counters, brasswork, &c., all in up-to-date designs, and in accordance with the elegance of modern shopfitting.

Kerner-Greenwood & Co., Ltd. (KINGS LYNN). **Stand No. 44, Row C.**

Cement Waterproofer.—The strictly utilitarian nature of their product, "Pudlo Brand" cement waterproofer, is hardly suggested by the stand of Messrs. Kerner-Greenwood & Co., Ltd., who have arranged a number of models in a garden setting in front of a well-designed pavilion. Thus we see the waterproofing properties of the material demonstrated by its application to the lining of a lily pool, a very practical test which is at the same time an attraction to the visitor. The pool is surrounded with grass banks, an unusual, but very charming, feature in a building exhibition

The Stand of Messrs. Kerner-Greenwood & Co., Ltd.

which at the same time forms a thoroughly practical test for the vertical dampcourses of waterproofed cement applied to the porous walls against which the grass banks are placed—and the effectiveness of the test is enhanced by the fact that the grass is being kept wet. On this stand also we see a miniature cascade of water running continuously over the surface of a wall which has been stuccoed with sand and waterproofed cement. One of the most striking exhibits on this stand is a tank made of coke-breeze blocks, which are perhaps the most thirsty of building materials and will absorb water almost as quickly as it can be poured on it; this tank, however, is lined on the inside with a facing ½ in. thick of sand and waterproofed cement, with the result that not one drop of water is able to percolate through. Among other interesting exhibits is an hydraulic machine which puts a pressure of 300 lb. per sq. in. on specimens of waterproofed cement, which are seen to withstand the pressure.

The Key Engineering Co., Ltd. (4, QUEEN VICTORIA-STREET, E.C. 4). **Stand No. 46, Row C.**

Roofing.—For the flexible asbestos roofing in which this firm specialises, a felt is used which consists of 96 per cent. of pure long fibre Canadian asbestos with 4 per cent. of cattle hair used as a matrix in forming the material instead of the organic fibres usually used. For the use of asbestos, though it is a rather more expensive material, the firm gives three reasons—first, that it is practically indestructible; second, acids have practically no effect on asbestos; and finally, the asbestos fabric is a great fire-resister. On the stand are felts of the type with a slate surface, grey green in colour, utilised to cover the back wall and fixed with wooden panel strips to represent the wall of a bungalow. On a large counter are exhibits of the raw materials used in the manufacture, emphasising the mineral construction of the felt; also test pieces which have been subject to blow-lamp flame tests.

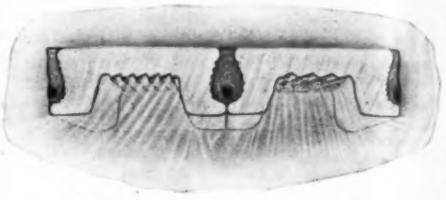
J. A. King & Co., Ltd. (181, QUEEN VICTORIA STREET, LONDON, E.C.4). **Stand No. 105, Row F.**

Slabs, Blocks, Pavement Lights.—One of the most interesting exhibits on this stand shows the application of reinforced concrete to pavement, floor, stallboard, and roof lights, with

King & Co.'s Flooring.

reinforced concrete framing on which are embedded cast-iron frames into which the glass is inserted. This type of light has been the advantage that periodical painting is no required. The glass prisms are 2 in. deep by 4 in. square on the upper surface, the lips being so formed that there is practically an entire glass surface on the underside. Between the glass prisms are small reinforced concrete beams, forming the frame. In another form, also exhibited, the construction is of light

in use for upwards of fourteen years, and is becoming increasingly popular. The firm is also well known for its partition and flooring slabs, made in all the usual sizes and surfaced ready for plastering or roughcasting. Plaster slabs for partitions, pugging, and ceilings are on view, and also a reinforced plaster roofing



King & Co.'s Pavement Light.

slab which forms a light type of fire-resisting roof with a surface to the underside which does not need plastering; this class of roof has exceptional insulating properties, and thus tends to keep the inside of buildings of an equable temperature with an absence of condensation.

Kleine Patent Fire-Resisting Flooring Syndicate Ltd. (133–136, HIGH HOLBORN, W.C.1) **Stand No. 110, Row F.**

Floors and Roofs.—In addition to their well-known flooring, now being used in so many of London's important new buildings, the company are exhibiting a roof constructed on their patent of reinforced hollow bricks. This roof is

The Stand of the Kleine Patent Fire-Resisting Flooring Syndicate, Ltd.

extremely light, being only 3 in. thick, and can be constructed in spans up to 8 ft. between purlins or other supports, either as an ordinary pitched roof or it can be constructed on the curve. It is eminently suitable for buildings such as aeroplane hangars, sheds, railway or dock warehouses, and also for north light construction, and the success of the firm's flooring system warrants a close study of this new roof. The hollow bricks themselves form a practically watertight roof, and for open-sided sheds any special waterproofing surface could be dispensed with. The cost of upkeep on roofs constructed in this manner should be negligible. We illustrate a drawing showing the construction of this new roof on p. 657.

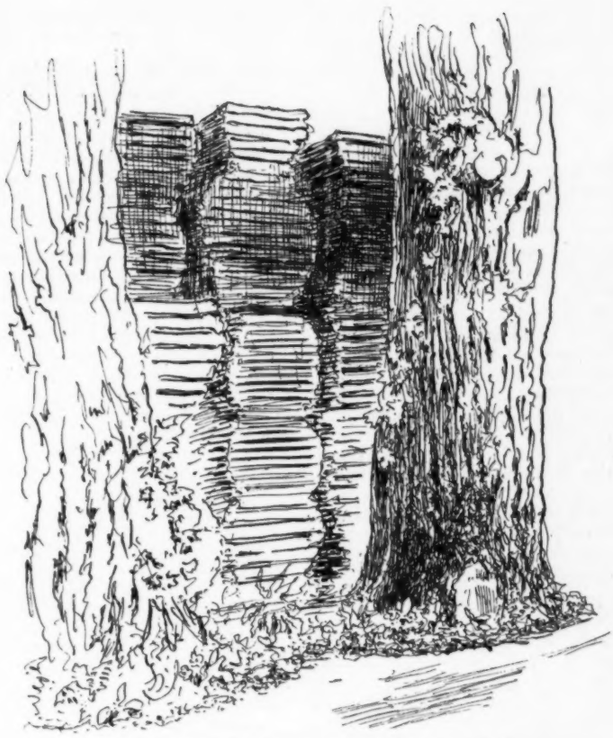
Lafarge Aluminous Cement Co., Ltd. (296–302 HIGH HOLBORN, W.C.1.). **Stand No. 267, Row R.**

Ciment Fondu.—Since the last Building Trades Exhibition the increasing popularity of

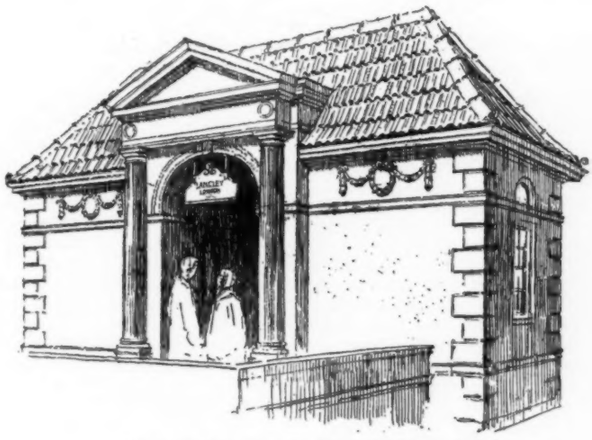
aluminous cement for all works where speed is essential has warranted the construction of a large new factory in Essex, which is now in full working order turning out *cime t fondu* in large quantities. Exhibits of actual cement do not mean much to the user, so the firm has concentrated on giving photographs, and especially progress photographs, of works in which their cement has been used. These are very remarkable, and would have been unbelievable a few years ago. We see traffic on roads for which the concrete was poured only the day before; piles driven 24 hours after casting; shuttering removed the same day that the concrete is placed. Aluminous cement concrete is as strong in one day as ordinary Portland cement in a month, and all that means in the way of more rapid construction is only now being realised by the most progressive engineers and contractors. Aluminous cement can hardly be called a new material at this stage; it was introduced into this country fifteen years ago, and was in use in France and elsewhere on the Continent a considerable period before then. Conclusive evidence of the fact that concrete made with *cime t fondu* does not deteriorate with age is available on the stand in the form of the results of durability tests carried out by Government departments and other authoritative bodies, which prove that time has no effect on the strength of aluminous cement concrete.

Langley London, Ltd. (161, Borough High-street, S.E.1). **Stand No. 148, Row H.**

Roofing Tiles.—This stand has been specially designed by Messrs. Welch & Hollis, F. and A.R.I.B.A., to demonstrate the advantages and attractiveness of Marseilles, Beauvais and Gilardoni Freres roofing tiles, also the improved interlocking pantiles. The Marseilles and Beauvais tiles are so well known in this country that they do not need any further description. The Gilardoni Freres, a tile similar in shape and appearance to the Marseilles, and the pantile which combines the appearance of the old-world pantile with an efficient interlocking system, have already been widely used by architects and housing authorities throughout the country. The stand of the Courtrai-Du Nord Tile Co., Ltd., of the same address, which has also been designed by Messrs. Welch & Hollis, demonstrates the charm and adaptability of these tiles for every type of roof—steep pitch or flat, mansard, gable or hipped constructions.



The Exhibit of Messrs. James Latham, Ltd.



Stand of Messrs. Langley London, Ltd.

Stand of the Courtrai-Du Nord Tile Co., Ltd.

James Latham, Ltd. (124, Curtain-road, E.C.2.) **Stands No. 149, Row H, and 140, Row H.**

Timber.—The firm's principal stand is No. 149, Row H, on which is displayed a very wide assortment of hardwoods, notable for some very fine figuring. A pile of French walnut in solid butts and enormous logs sawn to boards and planks is a notable feature, while the architect will be particularly interested in the series of finely figured boards and veneers made up into panels suitable for board rooms and such-like situations. There is a good selection of practically all the commonly used hardwoods, while there is a comparative new-comer in Nigerian walnut, a hardwood of very fine figure. On their other stand the firm concentrate on Mahtal boards, a plywood made in thicknesses from ⅜ in. to 1½ in. and in large sizes. These boards are specially made so as to reduce to a minimum any liability to shrinkage or splitting, and will no doubt be in considerable demand for partitions, counter tops, &c., when they become more generally known among the building and shopfitting trades.

W. T. Lamb & Sons (43, Shoe-lane, E.C.). **Stands No. 94, Row E, and No. 253, Row Q.**

Bricks and Tiles.—This firm are exhibiting a building in the form of a "Butt and Ben Cottage," in which they display their various materials, including the different thicknesses of multi-coloured bricks, brown hard Godstone bricks for hearths and door cills, nut brown hand-made Godstone roofing tiles, sand and lime bricks for scullery walls, small multi-coloured fireplace briquettes, and hard red quarry paving tiles. The exhibit shows excellent blending of the firm's products into the structure. The varying colours of the bricks, the scale of the work and the jointing and pointing giving a good example of the results of the use of the right materials in the correct manner, and shows how the need for small dwellings can be met without disfiguring the countryside. In the "Butt and Ben" the display of the firm's products has met with great success. The architect is Mr. Lionel Littlewood, of Ashtead, Surrey.

Lee & Fouracre (Steventon, Berks). **Stand No. 66, Row D.**

Machinery.—The "Lee Magnum" concrete moulding machines are being exhibited by this firm. The machines are built of steel, and thus

are exceptionally strong and durable, and at the same time they are capable of a rapid output of solid or hollow blocks, slabs or bricks. The latest type has been designed to enable the operator to make twenty-four standard-size bricks, at one operation, each brick having a slight hollow on the top and sharp clean edges. The machines can be easily manipulated by one man. Another advantage of the machines is that they are portable, as a slight tip backward brings the wheels into action, so that they can be wheeled to any desired spot.

Leeds Fireclay Co. (167, Strand, W.C.2). **Stand No. 98, Row E.**

Sanitary Goods.—As might have been expected this company is utilising its well-known Burmantofts terra-cottas in the construction of its stand, and thus visitors will be able to realise how admirably this material lends itself both constructionally and decoratively to buildings of every class. We are informed that the Regent Palace Hotel, the Strand Corner House, and the Park-lane Hotel, Piccadilly, offer conspicuous examples of the successful use of Burmantofts "Marmo." A faience arch supported on piers gives a further opportunity of showing the extent of the company's manufactures, which give scope to the architect

Leeds Fireclay Company.

to provide permanent colour to inside as well as outside surfaces. Burmantofts "Lefco" terra-cotta fireplaces are, of course, installed in houses all over the country, and their popularity will doubtless be enhanced by the examples shown on the stand. The sanitary section of the company's exhibit is attractive, there being some excellent specimens of "Imperial" porcelain white glazed fireclay ware in the form of a bath and new Carlton lavatory. Glazed bricks, tiles and Claridge's asphalt (of which the company is now the proprietor) all add to the importance of the exhibit.

Liner Concrete Machinery Co. (Glasshouse Bridge, City-road, Newcastle-on-Tyne). **Stand No. 275, Row S.**

Block-making Machines.—Two new machines are to be seen on this stand, a mixer and a block-making machine. The mixer, which may be had in either the stationary type or mounted on a road truck, is specially designed for mixing semi-dry concrete, and should thus be of particular interest to those concerned with the manufacture of concrete products or other work in which it is possible to use a mix of a drier consistency than in reinforced work. The other machine produces either blocks, slabs, or concrete bricks. The machine is made in two sizes, one with a mould box measuring 18 in. by 9 in. and the other 24 in. by 12 in. Wooden pallets are used; tamping is by an arm which is slammed down by hand; the block is raised upwards out of the mould by the operation of a lever at the side of the machine; any desired surface, such as rock-face, ribbed, &c., can be obtained by the insertion of special plates into the mould box; after tamping, the tamping arm is raised from the mould box and kept out of the way by a couple of strong springs. The machine seems to be as near foolproof as it is possible to design one.

London Brick Co. and **Forders, Ltd.** (Africa House, Kingsway, W.C.2). **Stand No. 129, Row G.**

Bricks.—This stand, constructed entirely of Fletton bricks, exhibits all kinds of Flettons—rustic, white, and other facings. The well-known brands of these standard building bricks, which can be examined on the stand, include "Phorpres," L.B.C., Forder, and Star, and it will be seen that there is no class of work for which Flettons are not suitable. Official tests have proved the excellent qualities of these bricks, with regard to which information may be obtained at the stand, together with the names of many of the large contracts on which the bricks have been used in accordance with specification. The output of the Company amounts to over two millions of bricks per working day.

Stand of London Brick Co. and Forders, Ltd.

London Exporters & Importers, Ltd. (25, King William-street, E.C. 4). **Stand No. 294, Row T.**

Tiles.—Some interesting varieties of Leforest roofing tiles, which have had an excellent reputation for quality for seventy-six years, are exhibited on this stand. First there is the straight joint pattern interlocking tile, originally patented in 1854; then there is the break joint tile, which is very efficient for keeping out driving rain and snow, and with which the continuous rain water channel from the ridges to the eaves (a feature of the straight tile) is avoided. Two models of the tile are on view—one small and one large. By using Leforest roof accessories, of which various specimens are on view, it is possible to tile certain types of roof without using mortar. The best pottery clay is used for all tiles and accessories.

London Sand Blast & Decorative Glass Works, Ltd. (46, Gray's Inn-road, W.C.). **Stand No. 92, Row E.**

Glass Decoration.—Every kind of decoration on glass can be seen on this stand. There are Venetian and other mirrors suitable for ball-rooms and restaurants; embossed and decorated plate glass panels for banks, offices, and house decoration; embossed and coloured ceiling lights; samples of suitable styles of all kinds of facias, stallboards, made in permanently vitrified enamels; illuminated signs, inside shop window reflector signs, &c.

F. McNeill & Co. (14, Lamb's Passage, Bunhill Row, E.C.1). **Stand No. 175, Row J.**

Roofing.—Roofings for both permanent and temporary buildings are shown by this company, who are the proprietors of the "Lion" brand roofings and underlining and sound deadening felts for building purposes. The "Lion" roofing is a high grade material of the rubber type, and it is shown on large-sized models, which give all the proper construction of roofs of various kinds; the formation of outlets, finishings, &c. It is claimed that this roofing gives most efficient service under any climatic conditions, and strong support is given to the claim by the growing use being made of it in the British Dominions and Colonies. There are models also showing the gradual formation of "Combinite" bitumen roofing as applied to flat or sloping roofs, and a further important feature is a demonstration of the special process of felting old or new corrugated iron roofs. For damp-proof courses an extensive range of pure bitumen dampcourse is shown, as well as "Leadonite"—an economical and efficient dampcourse. For fireproofing "Slag-bestos" is exhibited, and this is subjected constantly to large Bunsen burners to show its indestructibility from fire.

Manu-Marble Co. (Abbey House, 2, Victoria-street, S.W.1). **Stand No. 122, Row F.**

Reconstructed Marble.—Manu-Marble is a British reconstructed marble which has been extensively used in important buildings for a period of more than twenty years. The material is homogeneous, the colours going right through, and the texture being the same from back to front. Four different shades of the "Roman Stones" are now being manufactured, the material making an excellent wall lining. For floors it is made with an egg-shell gloss. It affords a good foot grip, and its wearing qualities are claimed to be at least equal to those of marble All information with regard to these materials will be supplied at the stand, together with a list of important contracts recently carried out.

Marble Mosaic Co., Ltd. (4, Linmos House, Charles-street, St. James, Bristol). **Stand No. 106, Row F.**

Marble.—This company is able to point to permanent specimens of work carried out, as it was responsible for the entrance to the Olympia extension, whilst on the stand itself is a very full range of its products. There are actual specimens of pre-cast "Imperator" for exterior and interior work, showing structural work, polished, gritted, &c. We might add that "Imperator" consists of specially selected hard marbles and cement, which is finished by machinery. This gives it an attractive appearance. Then there are shown "Imperator" tiles for flooring, both plain and ornamental; dados in terrazzo, with mosaic inserts; dados in tiles; and linolith composition flooring.

Francis Morton, Junior, & Co. (Napier House, High Holborn, W.C.1.). **Stand No. 186, Row J.**

Spring Dancing Floors.—With the modern enthusiasm for dancing the demands for suitable

floors is insistent, and hence the patent "Valtor" system of steel springs and girders for dancing floors of this firm are of importance to architects. Their stand consists practically of a specimen floor, 20 ft. by 10 ft. The mechanism which, so to speak, operates the floor is perfectly simple, and at the Savoy Hotel the whole ballroom floor, about 70 ft. square, may be changed from a resilient to a rigid floor or *vice versa* in five minutes. The firm laid this floor, as well as many others in well-known hotels.

Nettlefold & Sons, Ltd. (54, High Holborn, W.C.1). **Stand 107, Row F.**

Hardware.—The growing demand for iron furniture and fittings for cottages and small country houses makes the wide choice of these articles in armour bright and dull black finishes shown by Messrs. Nettlefold & Sons, Ltd., extremely interesting. Special patterns in wrought iron to architects' own drawings, which help to give individuality to a house, are also shown. A striking exhibit is the range of new model "Bardsley" springs. In addition to the "Mark 2" single-action springs, now well known, a new "enclosed" pattern, specially suitable for use in hospitals and wherever it is essential that dust should not be allowed to collect, is being shown for the first time. There is also a new double-action "Bardsley" for single or double swing doors, operated by a rising arm gear, which is much simpler and more compact than the old model. "Orbis" pivots as specified for the L.C.C. schools, a locking night latch, and a new casement hinge to lock are other items which exemplify the wide range of fittings for all types of buildings.

Novocrete and Cement Products Co., Ltd. (Novocrete House, Buckingham Gate, S.W.1). **Stand No. 271, Row R.**

New Building Material.—Because the material displayed is not yet generally known to the industry, this stand is attracting considerable attention. "Novocrete" is concrete made with a sawdust aggregate, the sawdust being chemically treated so that it does not crack and to give it high fire-resisting properties. It is a factory-made product, and is supplied in all the usual shapes of ordinary building materials, such as blocks, bricks, slabs, floor and roofing tiles, &c. The stand is in the form of a pavilion so designed as to display as many as possible of the applications of the material, and this it does very

The "Novocrete" Pavilion.

effectively, while at the same time it houses sections of walling, absorption tests, and gives other practical answers to the questions of the practical man who wants to know all about the material. The suitability of this material for numerous building purposes has been proved by many authoritative tests; it has a good surface for paint or paper without plastering; it can be polished; nails and screws can be driven into it; it can be sawn; has very little absorption and good insulating properties; and in addition is very light—weighing less than half the weight of ballast concrete. The material is so adaptable that it is claimed that it can be used for every part of a building except piping, sanitary fittings, ironmongery, &c.

Frederick Parker (Viaduct Works, Leicester). **Stand No. 130, Row G.**

Mixers.—A mixer with the advantage of a water tank with automatic control is one of the most interesting exhibits on this stand. The drum has a capacity of 4 cu. ft. (unmixed), and the machine is also fitted with a loading hopper. Drive is by a 2½ h.p. Lister engine, which is very economical in fuel consumption, and the plant is easily controlled by one man. The machine gives an impression of great strength and sturdiness, one of the most essential features of an item of plant subjected to such rough usage as a mixer. Other exhibits on this stand are a solid-breaker brick breaker, and a portable solid-body stone-breaker with screen and engine in a self-contained plant mounted on a rigid chassis.

Perkin & Co., Ltd. (Junction Works, Whitehall-road, Leeds). **Stand No. 165, Row H.**

Woodworking Machines.—The principal exhibit on this stand is the firm's well-known "Rapid" stair houser. This apparatus is easily fitted to any spindle moulder, and will rout a pair of 15-rise strings in a few minutes. It is also adjustable for sunk panels, newels, &c., and with a further attachment it will rapidly do straight routing for shelves, &c. The apparatus greatly increases the value of a vertical spindle moulder, and a great many are now in use. Other exhibits include chain and hand mortisers, sawbenches, band saws, planers, and trimmers. The new "Perco" surface grinder has adjustable spring tension, in place of a jockey pulley, and the idle drum is now fitted with a sensitive lateral adjustment to keep the band running true.

C. A. Peters, Ltd. (Stores-road, Derby). **Stand No. 64, Row D.**

Coloured Cements, Wood Preservative.—Recent experiments at Becontree and Welwyn Garden City have aroused much interest in the question of colouring concrete, particularly for the walls of small houses. One of the commonest methods of imparting colour is to colour-wash the walls with a cement wash in which iron oxides or pigments have been incorporated, and in order to eliminate any possibility of any unevenness in the result owing to lack of thoroughness in the mixing on the site, cements are now on the market in which the colouring material is already mixed at the works. Messrs. Peters were one of the first firms to specialise in coloured cements, and on their stand are exhibited a number of panels showing the different effects that may be obtained. The well-known "Carbolineum" wood preservative, which has now been on the market for over 40 years, is another product of this firm, and its uses are demonstrated on the stand.

Penfold Wire Fencing (F. E. Bull), (109, Kingsway, W.C.). **Stand 255, Row Q.**

Fencing.—An efficient and at the same time an economical system of fencing is a matter of very considerable importance at the present time, and especially in connection with housing estates. Before the advent of the garden city and suburb the dominant desire of the householder was to put the highest fence possible round his house, so as to preserve the strictest seclusion. Now the estate planner is much more modest in his aims, or perhaps it is he is forced by economic considerations to cut the fencing to the lowest figure. On the stand of the Penfold Wire Fencing will be found fencing for every purpose, including a cheap dividing fence for houses. This is manufactured from galvanised wire of the highest standard of quality, tested to a breaking strain of 28-30 tons to the square inch. There is no waste in erecting this fence, as one length can be easily connected to another without showing a join. A Penfold fence can be erected the full length and width of a garden without a break, irrespective of size or shape. There are also on view Penfold tennis-court surrounds, which are very largely used by tennis-court contractors all over the country. In addition, there is to be seen Chain link fabric, for filling in ironwork of bridges, railway approaches, machine guards, &c.; as well as chain link reinforcement fabric, for roads, roofs, floors, &c.

Presto Lock Co. (Sentinel House, Southampton Row, W.C.1.) **Stand No. 116, Row F.**

Ironmongery.—This company is the sole agent in Great Britain for the Schlage Co. of California, and is showing the Schlage button locks, which have a considerable vogue on the other side of the Atlantic. The lock is a departure from the type used generally in this country. There is no necessity for inside keys, or for special latches or sliding bolts—all that is necessary is to press the button in the knob to lock the door, and turn the knob to unlock it. The lock is not fastened to the wood of the door, but held tightly in place by two steel plates of its own unit type construction drawn up with two machine screws. All working parts are made of high-grade electro galvanised steel, and enclosed in a protective housing of sherardised steel.

Thomas Potterton (Cavendish Works, Ravenswood-road, S.W.12). **Stand 41, Row C.**

Hot Water Appliances.—A full display of hot-water appliances is being shown embodying the "Victor" gas boilers with various forms of combined equipment to operate with solid fuel for different purposes. There are also standardised coke boilers for heating and general domestic requirements. In these days gas has obtained such general recognition as an economical method of heating that it requires little advocacy, but in the working installations on the stand will be found examples of high efficiency apparatus which clearly demonstrate the convenience and reliability of gas as a fuel. The "Victor-Combination" boiler of solid and gaseous fuel is fitted in conjunction with a "Chef" cooker, and this is being advanced as one of the most advantageous forms of equipment for the kitchen of an ordinary villa residence, flat or cottage. The high price of coal, which would seem to have become a permanent feature, is causing more and more people to examine closely other methods of heating, and architects will have an excellent opportunity of seeing what can be done by the company.

"Progres" Building Material Supply, Ltd. (3 Tudor-street, E.C.4.). **Stand No. 121, Row F.**

Roofing Tiles.—"Progrès" and "Beauprez" roofing tiles are both exhibited in various types of roof. Of excellent quality and good texture these tiles should appeal to those who appreciate the charm of a tiled roof. They are shown in red and black (the latter varnished), and a selection of ridge tiles, hip tiles, &c., are on view. All the tiles are interlocking, some of them double-interlocking. A novelty on this stand is a glass tile in position in a section of roofing; this should be in demand for situations such as over staircases, where the admittance of light is desirable, as by interlocking with the other tiles it needs no frame to require periodical painting or repair.

Rhodes Chains, Ltd. (26, Charing Cross-road, W.C.2.). **Stand No. 40, Row C.**

Chains, &c.—This firm is exhibiting improved chains for sash hanging, together with a large range of pulleys of the round and square grooved ordinary axle type and cog wheel pattern, as well as ball-bearing pulleys, with cog and square grooved wheels. A special feature is made of the sleeve-bearing pulley, a section of which may be seen showing the fixed solid steel sleeve over which the wheel runs, thus giving it a bearing surface estimated to be four times greater than the ordinary axle pulley. Sash chains specially designed to run over existing pulleys will probably interest all those who are concerned in maintenance costs. These can be used to take the place of existing sash cords as they break.

Rippers, Ltd. (165, GRAY'S INN-ROAD, W.C.1.). **Stand No. 52, Row D.**

Joinery.—The stand in this case is a good example of how a firm's speciality can advertise itself, for few visitors will be able to pass it without pausing to examine. The stand is designed to show a treatment for a staircase and surround in oak, the style being reminiscent of the Tudor domestic period. In these days when greater attention is being paid both by architects and the public generally to the desirability of erecting buildings which are attractive both externally and internally, there is a growing demand for work in this period of architecture, and the exhibit gives a good idea of how satisfactory such treatment is in skilful hands. Various examples of hardware doors are also on view, together with the firm's patent hospital doors which have been constructed to meet a demand for something which is free from projecting or recessed surfaces. Architects and builders will be interested further in the representative section of joinery designed to meet present-day housing requirements.

Thomas Robinson & Son, Ltd. (RAILWAY WORKS, ROCHDALE). **Stand No. 170, Row J.**

Woodworking Machines.—Among the range of woodworking machinery on this stand, one particularly notices a universal woodworker. This machine may be had as a simple hand-feed planer and moulder, if desired, and the other attachments added later. It can be adapted for sawing, planing, surfacing, jointing, rebating, chamfering, stop-chamfering, tonguing, grooving, beading, thicknessing, straight and circular moulding, recessing, sandpapering, tenoning, slot mortising, boring, and hollow chisel mortising—practically every requirement of the builder's woodworking shop. Any width of timber can be planed up to 12 in. wide. Timber up to 3½ in. can be worked with circular and irregular moulding. Tenons up to 5 in. long can be cut, and for mortising the machine will take chisels up to ¾ in. square. This machine and its attachments should be of particular interest to all builders visiting the exhibition.

Rubber Growers' Association. (2, IDOL-LANE, E.C.3.). **Stands Nos. 79 to 82, Row E.**

Rubber.—An entirely new feature at this year's exhibition is the participation of the Propaganda Department of the Rubber Growers' Association. The idea is to introduce the actual and potential uses of rubber to the building trades, and thus afford an opportunity to those engaged in them of obtaining a closer acquaintance with the properties and qualities of rubber and the various performances it will give under specified conditions. To achieve this purpose a comprehensive exhibit has been assembled at which visitors will be able to study rubber at first hand and ascertain how it can be utilised in the various branches of the trade. Actual samples are on view to demonstrate the insulating and damp resisting qualities of the product and its possibilities as a medium of artistic decoration.

J. Sagar & Co., Ltd. (HALIFAX). **Stand No. 1, Row A.**

Woodworking Machines.—A selection of woodworking machines specially designed for the use of builders and contractors is to be seen on this stand, several of them being in operation. All the usual types are to be seen, most of them incorporating recent improvements. Of particular interest is a chain-feed edging and sawing machine, for ripping and edging timber straight and true in length up to 26 in. wide by 4 in. thick. For general mortising in hard or soft woods there is a semi-automatic chain cutter and hollow chisel mortising and boring machine of exceptional output. Another machine of special interest is the "Premier" combined hand and roller-feed surface planing, thicknessing, moulding, &c., machine, for planing out of twist, making glue joints, bevelling and chamfering, rebating, tonguing, grooving, moulding, &c. For the heaviest or finest work in planing and thicknessing at high speeds there is a heavy double-geared roller-feed machine, with a very high speed even on the heaviest work.

Scaffolding (Great Britain), Ltd. (43, LANSDOWNE-ROAD, S.W.8). **Stand No. 51, Row D.**

Scaffolding.—Special features are made on this stand of the firm's well-known suspended scaffolding, tubular scaffolding, and "Conforms." A model is shown of a spectators' stand erected in tubular scaffolding, such as was used for the opening ceremonies at Littleton Reservoir and the Great West-road last year. This type of stand can be erected at high speed; one to accommodate 5,000 people can be put together in ten days and rapidly dismantled. The scaffolding is sectionised, so that any size scaffold can be erected from the standard size units. There is also a model of suspended scaffolding, by the use of which the lower floors are left clear as the building work proceeds. This type should be specially useful in the erection of a modern steel-frame building. Metal shuttering of the "Conform" type is coming into increasing popularity amongst contractors who realise the advantage of having an indestructible form in small units which can be used for any design without deterioration or cutting to waste. The plates are of pressed steel, and fitted together by clamps fitting over the flanges. All interested in modern methods of reducing time and labour costs in decorating or building construction should make a point of inspecting these models and the other exhibits on the stand.

Silicate Paint Co. (46, CANNON-STREET, E.C.4). **Stand No. 97, Row E.**

Paints.—This exhibit consists of a room, English in style, decorated with "Duresco," so widely advertised as "The King of Water Paints." The ceiling, cornice and mouldings are treated with white Duresco, No. 46, and the frieze is maize gold, on which is stencilled a conventional honeysuckle ornament. The panelled walls are in a lighter shade corn yellow. The dado and woodwork is finished with white Silpaco. The plain deal door is stained with the company's mahogany stain and varnished with fine copal oak varnish, No. V. 224, which is one of the many well-known varnishes made by the company. The whole treatment is simple yet artistic, and leaves the impression of being a desirable room to live in. The exterior generally is treated with blush-rose Duresco, and the facias and dado are in deep marigold Duresco. The pilasters, &c., are in broken white Silpaco. A special feature is the panels, decorated by the prize-winners in the company's Duresco Competition, demonstrating how fine a medium the paint is in the hands of craftsmen. There is also exhibited a slab of Duresco, measuring 36 in. by 24 in. by 1 in. thick. One thousand five hundred coats of the material have been given, the object being to show that when applied on a secure ground it will not flake or disintegrate.

Smith & Wellstood, Ltd. (11, LUDGATE-CIRCUS, E.C.4). **Stand No. 220, Row L.**

Heating and Cooking.—Probably visitors to this stand will be most interested in the "Esse" independent boiler, which is being shown in action with a Beardmore semi-rotary pump. This is to demonstrate how hot water can be pumped into the bath on the floor above without the usual hot-water system. The Esse water-heaters are made in various sizes, and there is no doubt that they are an economical proposition, for a certain amount of cooking can be done with them, and as the fire is always visible there is no objection to them on the part of servants. "Columbian" cookers with enamelled fronts to ensure cleanliness and other refinements are being shown. The new patterns are the "Countess" and the "Fairy"; the former has a new form of elevated hot closet and brackets below the closet to take additional utensils; whilst the latter is being offered at a very low price for a piece of apparatus which is 27½ in. wide, 19 ft. deep, and includes an oven 13 in. wide by 14 in. deep. A "Hostess" caravan range will demonstrate the thought which has been shown in the design. The "New Leader" range and the "Wellstood" range are already largely in use and will probably be known to most visitors. The same remark may be made of the domestic copper known as the "Cow" brand. Slight improvements are, of course, made from time to time in these standard lines.

Stephens & Carter, Ltd. (PADDINGTON-GREEN, W. 2). **Stand No. 245, Row P.**

Ladders and Scaffolding.—Ladders, barrows, steps, trestles, tarpaulins, dust sheets, trucks, and other plant which is absolutely necessary to the builder will be found on this stand. There is a full-sized working model of Carter's (Spencer's patent) travelling cradle which, by means of a special jointed track, can be made to cover any length of frontage with one fitting. Further, owing to the patented joints, the cradle can be made to follow curves or projections on a building. There is to be seen also an improved form of steel scaffolding, the tube used being of the solid drawn weldless type. A point of interest to the builder is that the coupler used is universal, and one can be used to secure two tubes at any angle.

Superglaze, Ltd. (25, BREAMS BUILDINGS, CHANCERY-LANE, E.C.4), **Stand No. 223, Row M.**

Glaizer Tiles.—One of the surprises of the exhibition is the adaptation of modern materials to an age-old use to be seen on this stand. Here we see glazed tiles in a variety of colours and finished at only a percentage of the cost of ordinary tiles, with the additional advantage that they cannot craze, and any number of colours may be blended in the same tile without adding to the cost. The material which makes this possible is concrete, in conjunction with a process of cold glazing. This type of cold glaze has been in use on the Continent for many years, and has been used for such important structures as some of the principal railway termini. Glazed concrete is now available in this country, and should be seen on this stand by all interested in modern building materials. A special feature is a display of fireplace surrounds cast in one piece, thus eliminating all possibility of the trouble of tiles coming loose. The surrounds are thoroughly reinforced both with rods and expanded steel, so that there is no danger of them becoming distorted with heat. These glazed tiles and surrounds are displayed in a large variety of attractive colours and shades, and in different patterns, and we understand they may be made to meet any requirements of the architect. Moreover, the whole of the process, materials, and labour used in the manufacture are English.

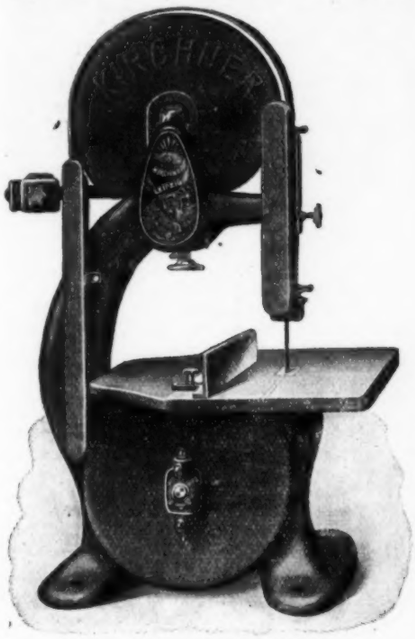
John Tann, Ltd. (117, NEWGATE-STREET, E.C. 1). **Stand No. 42, Row C.**

Safes.—After an inspection of this firm's exhibit, visitors will be able to appreciate that the burglar who can circumvent the genius of the designers must be a man of unusual attainments. Of special interest are the massive crane-hinged, water-tight, anti-blow-pipe banker's strong-room door, and the section of brickwork containing two steel wall safes. This strong-room door represents the last word in security work and is constructed to withstand all known means of attack, including the oxy-acetylene blow-pipe, explosives, and all cutting and penetrating tools. With regard to the wall safes, these are designed to provide moderate protection against burglary in private houses. When built-in and covered with wall-paper they are unobtrusive. There is also shown various types of strong-room doors and safes for all purposes.

Thacker & Co., Ltd. (107, NEWINGTON CAUSEWAY, S.E.). **Stand 167, No. Row J.**

Woodworking Machinery.—Messrs. Thacker & Co. are the London agents for Messrs. Kirchner & Co., of Leipzig, of whose woodworking machinery an excellent selection is exhibited. The accompanyi ng illustration shows the "H.N.C." "Gloria" bandsaw, which is one of the firm's latest designs. The diameter of the saw pulleys is 32 in., and the machine, which

runs on ball bearings throughout, will cut timber 18 in. high. Other machines exhibited include a four-cutter moulding machine, an improved tenoning machine, a new vertical



The "Gloria" Band Saw.

boring and hollow chisel mortising machine, an improved circular saw bench, a pendulum cross-cut saw with fixed motors, and other pieces of machinery of interest to builders and contractors.

Thames Board Mills, Ltd. (CLUN HOUSE, SURREY-STREET, W.C. 2). **Stand No. 141, Row G.**

Wall Board.—This pavilion is specially interesting in showing some very fine moulding work, both over the doors and in the form of beading to the panels. Very large panels are used, from which the visitor can see the possibilities of this type of wall board and also test its rigidity when used in large pieces. Both inside and outside the pavilion opportunity is taken to show how well the material takes decorative treatments, whether in paint, distemper, or other form. The stand should be of particular interest to architects who desire to obtain good panel effects at low cost.

Triangular Construction Co., Ltd. (IMBER COURT, EAST MOLESEY, SURREY). **Stand No. 8, Row B.**

Concrete Construction.—The system of walling introduced by this company some years ago, in which use is made of triangular hollow blocks in multiples of a standard size, so that with a few sizes any size or shape of wall or column can be built, and corners and window and door openings easily negotiated, has met with considerable success, and is now being used for the erection of a large number of houses on municipal and other schemes. The exhibit concentrates on practical tests to prove the strength, durability, and quality of this type of wall. Thus we see by a thermal test that more heat escapes through a brick wall than through an equivalent thickness of triangular walling; a condensation test shows the higher resistance of a hollow wall to condensation, even when jets of steam are applied to it; while compression tests are undertaken to show the strength of this type of walling. The application of the Triangular system and its simplicity are amply demonstrated by full-size sections of walling. Other exhibits are cement-sand roofing tiles, Broseley pattern, and the "Trianco" block and slab machines, which, operating on the wet process, produce blocks of very great strength. An exhibit which is arousing much interest is a machine for laying blocks in walling, by which it is claimed that the equivalent of 16,000 bricks can be laid per 8-hour day by two men.

Triplex Foundry, Ltd. (GREAT BRIDGE, STAFFS). **Stand No. 11, Row B.**

Cooking and Heating Apparatus.—Every type of cooking and heating apparatus is of interest at the moment, when economy is so urgently needed. The Triplex Foundry Co. starts with an advantage over many competitors, inasmuch as the "Triplex" grates have been known for a long time and have proved their efficiency by ample service. At the stand this week the "Triplex" grate, Model C, is shown at work coupled up to a 30-gallon cylinder. This gives a copious supply of hot water, two hot baths per hour being guaranteed. The roasting oven is big enough to suit a good-sized family and is strongly built of cast-iron; whilst the boiling hot closet above the oven is heated entirely from exhaust gases from the oven and will keep three saucepans boiling at once. The "Workwell" grate is designed especially for workmen's dwellings, where a bright fire, good cooking oven, and a large boiling hot-plate are all necessary features. A new feature this year is the "G" pattern Triplex grate with an oven on either side of the fire. This is designed to meet heavy requirements in large houses for entertaining. It is evident that the designer of the model has devoted care to getting what we may term a nicely balanced effect.

Tuke & Bell, Ltd. (27, LINCOLN'S INN FIELDS, W.C.2.). **Stand No. 60, Row D.**

Sanitation.—This firm have for many years specialised on sewage purification and water filtration, and one half of its stand is occupied by a full-sized model showing a semi-septic sewage purification plant capable of dealing with the drainage from a country house with six or eight persons in residence. The installation is fixed just as it would be in actual practice, and comprises the tank, which is supplied in ferro-concrete sections ready for fixing complete with self-contained baffle, galvanised wrought-iron inlet and outlet slides, and ferro-concrete cover in two pieces. The company is showing also an automatic sewage ejector capable of lifting crude sewage from deep basements, or from a low level sewer to one at a higher level, or to a sewage purification plant from which a gravitation outfall can be secured.

Turner Bros. Asbestos Co., Ltd.) TRAFFORD PARK, MANCHESTER). **Stand No. 151, Row H.**

Asbestos-Cement Products.—"Trafford" asbestos-cement sheets for covering large areas, which were used with so much success at the British Empire Exhibition, are a striking feature of this stand, which takes the form of a pavilion entirely constructed of the firm's specialities. The roof consists of 4 ft. by 3 ft. 8 in. tiles, pantiles in asbestos cement, 15¾ in. by 11¾ in. diagonal tiles, and slates, all shown in the various attractive colours in which they are manufactured. The walls are built up with wall linings, and here the visitor will welcome the use also of some of the roofing tiles and ceiling linings, which give an opportunity of close inspection. In the pleasant colours used for the pavilion we get an excellent impression of the effects that can be obtained with the materials, which have the additional advantages that upkeep is practically nil, while at the same time an extremely light structure is obtained. A new product of the firm, which we have not seen before, is a waterproof asbestos sarking felt; this should be particularly useful for use under slates, and is, of course, rot-proof and vermin-proof, as are all asbestos materials.

Vulcanite, Ltd. (OLD FORD, E.3). **Stand No. 99, Row E.**

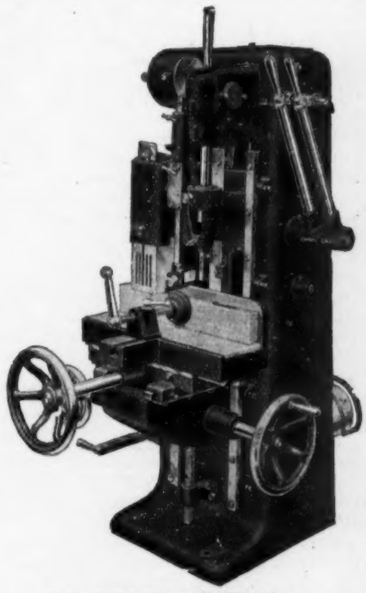
Waterproof Roofing Materials.—Models, illustrating the patent vulcanite roofing for the covering of flat roofs, &c., are the feature of this company's stand. It is a permanently waterproof surface for flat roofs (wood or concrete), roof tanks, and for waterproofing basements. It is claimed that the material is not affected by vibration, settlement, expansion, or contraction, or change of temperature The company is also showing roofing felts and dampcourses of various qualities, Kamfer felt for carpets and ordinary carpet feltine.

Thos. White & Sons, Ltd. (PAISLEY). **Stand No. 83, Row E.**

Woodworking Machinery.—Among a good selection of woodworking machinery, attention on this stand is specially directed to three of the firm's most recent productions, namely, an automatic plane iron grinding machine, an overhead belt sander, and an automatic mortising machine. The plane iron grinder has a saw gulleting attachment, and will also grind moulding irons. The overhead blet sander can be used with pressure pad or hand pad. A special feature of the automatic hollow chisel mortising machine is that the oscillating gear is totally enclosed, and has intermittent or continuous oscillation of the chisel. Other machines which should be seen by all interested in woodworking are a combination planing machine gear feed box, which will feed timber 24 in. wide at a speed of 60 ft. a minute; a chain and hollow chisel mortising machine with single-lever control and no internal belts; a builder's tenoning machine with a special arrangement of scribing spindles; and a universal saw bench with a capacity of two 14 in. saws or one 20 in. saw. There is also a special display of abrasives, for which the firm are sole agents for the woodworking industry in Great Britain.

Wadkin & Co. (GREEN-LANE WORKS, NORTH EVINGTON, LEICESTER). **Stand No. 193, Row K.**

Woodworking Machines.—This is one of the most comprehensive displays of woodworking machines at the exhibition, eight models being shown, most of them in operation. These include saw benches, a surfacing and thicknessing machine, a planing, tonguing and grooving machine, a vertical spindle moulding machine, a mortising machine, a tenoning machine, and a boring and recessing machine. The chain and hollow chisel mortising machine is a very



One of the Wadkin Exhibits.

useful tool for all kinds of joinery work. Both chain and chisel are fitted with automatic clutch for stopping the tools immediately after they are withdrawn from the work, and there are many other exceptional features. It takes timber up to 12 in. deep by 8 in. wide. Using the chain, it gives a maximum size mortise of 10 in. by 3 in. by 6 in. deep, while it takes a chisel up to 1 in. It will bore up to 1¼ in. diameter by 8 in. deep. The table is 24 in. by 8 in., and requires only 3 b.h.p. to drive. This machine should be seen by all interested in keeping mortising costs at a minimum.

S. Wills & Co. (6, ELDON-STREET, E.C.2). **Stand No. 65, Row D.**

Wax Paints.—"Wallpax" patent wax paint is the principal item of the company, and the stand represents an Oriental building treated

with some of the most effective shades of wax paint in combination with "Albion" brilliant gloss enamel. In addition to the decoration of the building various specimens of material treated with "Wallpax" are shown. It is well recognised that slabs of concrete and asbestos sheeting are some of the most difficult surfaces for the adherence of paint, but "Wallpax" apparently overcomes such difficulties for bath materials are shown treated with the white paint as a primer, and it is claimed that after such treatment no other preparation is required before proceeding with the subsequent coat or coats of paint. "Albion" white paper enamel is suitable for inside or outside use. It appears rather creamy in the wet state, but dries out quite white. The company manufacture a range of varnishes of all grades and for all purposes, and these can be seen at the stand.

Winget (1924), Ltd. (Winget House, Grosvenor Gardens, S.W. 1). **Stands No. 233, Row N, and No. 234, Row O.**

Plant.—One of the pioneer firms producing concrete machinery, Messrs. Winget have now a very wide range of items of plant which is being constantly added to and improved. The firm are best known for the block-making machines and mixers, and one of the most interesting features of the stands (which face each other in the new hall), is the latest model of the well-known pressure block-making machine, a machine which has now become so popular that one would have thought further improvements to be almost impossible. However, in the 1926 model we see that the pressure has been increased to ten tons with the expenditure of no extra effort on the part of the operator: the operating wheel is now on the right-hand side instead of at the back; and the three doors of the mould-box may be opened at one operation. With these improvements, the machine is now capable of turning out over 100 blocks or slabs per hour. It is interesting to note that a battery of four of this type of machine produced the whole of the 700,000 blocks used for lining the Littleton Reservoir opened last year. Other block-making exhibits range from an automatic slab machine with an output of over 200 slabs a day, to the simple and light hand machines. Mixers of the semi-spiral, drum, and paddle-arm type are on view, and also plant for reducing material down to the sizes desired for concrete aggregate; a combined clinker screening and crushing set; a 40-ton screening plant, portable and self-contained; conveyors; and other indispensable items of contractors' plant.

Woco Door Co. (Dashwood House, E.C.2). **Stand No. 57, Row D.**

Pine Doors.—This exhibit takes the form of a two-story house constructed entirely of Columbian pine doors. Various types of doors are shown in the ground and first floor, forming the walls and entrances, while the roof is composed of casement doors. Included in the doors displayed are most of the types which have been used in many municipal housing schemes, as well as more expensive doors. A further exhibit is a new plaster wall board, which can be had in squares of varied dimensions, and gives an excellent wall.

Yorkshire Copper Works, Ltd. (53, New Broad-street, E.C.2). **Stand No. 268, Row R.**

Copper Tubes.—This company has made a speciality of light gauge tubes for houses, and its products are being specified by architects in many directions. The "Y.C.W." light gauge housing tubes are produced in a special finish which makes them particularly suitable for use with all types of compression joints. They can be bent, drifted, flanged without annealing, which tends to ensure a quick, reliable job with minimum labour costs. All tubes are made from metals rigidly tested and inspected to 1,000 lbs. per sq. in. water pressure before despatch. Copper tubes are shown in standard sections for water service pipes, and demonstrations will be given showing the ease and facility with which they can be bent, drifted, &c. The company specialises in making tubes in all non-ferrous alloys, including cupro-nickel, phosphor bronze, aluminium, &c. Copper tubes are manufactured in all sizes from .005 in. inside diameter to 24 in. inside diameter, and an interesting display is made of a tube .005 in. inside diameter, 266 ft. long in one length, without joint! It will be demonstrated that the diameter of the hole is uniform throughout the whole length.

MR. FRED G. HODGES,

The President of the National Federation of Building Trades Employers,

Although one of the youngest members to occupy the position, has had long experience of Association and Federation work, and has held various and progressive offices. The Burton-on-Trent Association appointed him its auditor in 1912, and three years later elected him its President, an office he held until 1918. In 1920 he was elected President of the Midland Federation. Since 1912 he has held various other offices in the Midland area. It was natural that Mr. Hodges' long and useful labours should cause his innumerable friends to see in him a future President of the National Federation itself, and the first step in that direction was taken when he was appointed its junior auditor. Since then he has taken progressive steps, until we now see him in 1926 as President. In addition to his other duties he is a member of the N.W. and C.C., Chairman of the National Grading Commission since its inception, Chairman of the Special Committee which drafted and brought into being the present National Working Rules and Conditions, member of the National Allied Disputes Committee, member of the National Building Industry Committee, and a Fellow of the Institute of Builders. Mr. Hodges is now chief of the firm of Messrs. Geo. Hodges & Son, builders and contractors, Burton-on-Trent, which was founded by his father 50 years ago.

ANCIENT LIGHT DISPUTE

Wrensted & Bethurst v. Beardmore.

These were two actions brought by the plaintiffs, the occupiers of No. 11, Inverness-terrace, Bayswater, W., for injunctions to restrain the defendant from erecting on the site of old brewery known as 24, 26 and 28, Queen's-road, Bayswater, any wall or structure so as to darken, injure or obstruct the plaintiffs' ancient lights.

The plaintiffs (who brought separate actions, but which were tried together) complained that the proposed buildings of the defendant would seriously diminish the light coming to the dining-room and the consulting room respectively at the back of their premises, whilst the defendant contended that there would be ample light for all ordinary purposes and that his proposed building, when erected, would cause no sensible interference with the reasonable comfort of the occupants of No. 11, Inverness-terrace.

On behalf of the plaintiffs the following experts gave evidence:—Mr. Thos. Henry Smith, architect and surveyor, of Basinghall-street, E.C.; Mr. Chas. Gordon Smith, architect and surveyor, of 56, Cannon-street, E.C.; and Mr. Sidney Algernon Wilde, partner in Messrs. Farebrother, Ellis & Co., of 29, Fleet-street, E.C. For the defendant evidence was given by Mr. Percy John Waldram, 81, Dean-street, W.C., and Buckingham Gate, S.W., expert in ancient lights; Mr. F. R. Taylor, architect and surveyor, of Theobalds-road, E.C., and Messrs. E. R. B. Harris, and Mr. J. D. Harris, of Theobalds-road.

Mr. Justice Romer, having previously had a view of the *locus in quo* on Monday, March 29, gave judgment. He said that, having had the opportunity of inspection, he need only say that he had come to the conclusion that the erection of the defendant's building would not be a sensible interference with the comfort and enjoyment of the two rooms in question in No. 11, Inverness-terrace. He deeply regretted that the experiment he had seen that morning had not been made before the costs in the action were incurred. If they had been he could not conceive that the actions would have ever been brought. The actions would be dismissed with costs.

Sir Thomas Hughes, K.C., for the defendant, said that his client's building had been delayed for nine months by an order obtained on motion and he asked for an inquiry as to damages.

His lordship granted the inquiry, the costs of which, he said, would be reserved.

A New Paint List.

We have received from Messrs. Blundell Spence & Co., Ltd., of Hull and London, a copy of the new general list of their products, which include paints, colours, varnishes, enamels, distempers, &c., and anti-fouling compositions. The list is fully annotated and illustrated, some specimen colours being included in the form of small oblongs and roundels. The nature and purpose of each speciality is briefly explained, and lists of standard tints and colours are given. The list should be of considerable interest to architects and builders, and those desiring a copy should write to 9, Upper Thames-street, E.C.4.

Roman Remains.

A Roman hypocaust or heating furnace probably connected with an extensive Roman villa has been discovered at Hartley, near Longfield, Kent.

The remains of a Roman villa in a good state of preservation have been found during excavation work on the Mount Pleasant estate at Newport, Isle of Wight. They consist of a small area of tessellated pavement, which evidently formed part of a corridor, the greater portion of which has been destroyed during previous excavations. There is also a well-preserved Roman bath, 8 ft. long, 3 ft. wide, and 2 ft. 6 in. deep, and connecting with this are the remains of a hypocaust.

THE "BUILDER" CONSTRUCTIONAL PROBLEM COMPETITION

This Competition is limited to students in architecture and building classes or schools, assistants who have not passed the Final of the R.I.B.A., and others engaged in architecture or building, not over 25 years of age. A prize of £1 will be awarded each week.

Drawings to be on paper, tracing paper, or linen, not exceeding 30 in. by 22 in. (Imperial size), and should be in ink, with bold lines and printing, as the drawings, if reproduced, are much reduced in size. The drawings can be sent folded in a large envelope or rolled. Competitors must put their name and address on each drawing. Those who wish to have their drawings, &c., returned must enclose a stamped and addressed adhesive label.

Answers, addressed to the Editor and marked "Problem 14," to be sent in not later than first post, April 26. The Editor's decision to be final.

Note.—The date for sending in solutions to Problem 14 should read April 19, and not April 12.

Award for Problem 12.

The winner this week is Mr. R. A. Phillips, of Bournemouth, who submits a design that would look well in execution. His drawing, which is published in this issue, is very well detailed, the only doubtful item being the shape of step No. 1. The change in the going of this one step might lead to stumbling on the part of the user.

Mr. Teague submits a good working drawing but his general arrangements are not so well planned as the winner's. He has broken his flight of steps into one step, then a landing repeated four times. Two flights with two landings, as shown by the majority of competitors, is a more satisfactory arrangement.

Mr. Bowman submits a neat design in which reinforced concrete beams carry the stone steps and landings, but the proportions are not so good as in the winning design.

Mr. Greenwood's design shows the steps in one flight, with landing at top, but the steps are each about 2 ft. tread with a 6 in. rise. This is a type which is not popular as one has to take a double step upon each tread.

Others have thought out very fair designs and details, but pressure upon space this week prevents our making any comment upon them.

Problem 15.

Two old buildings, each of 30 ft. frontage and 60 ft. depth, and each consisting of ground and three stories over, adjoin each other. Each story is 10 ft. high floor to floor. There are wide streets at front and back of the buildings. It is proposed to construct a basement 12 ft. high floor to floor to one of the buildings only.

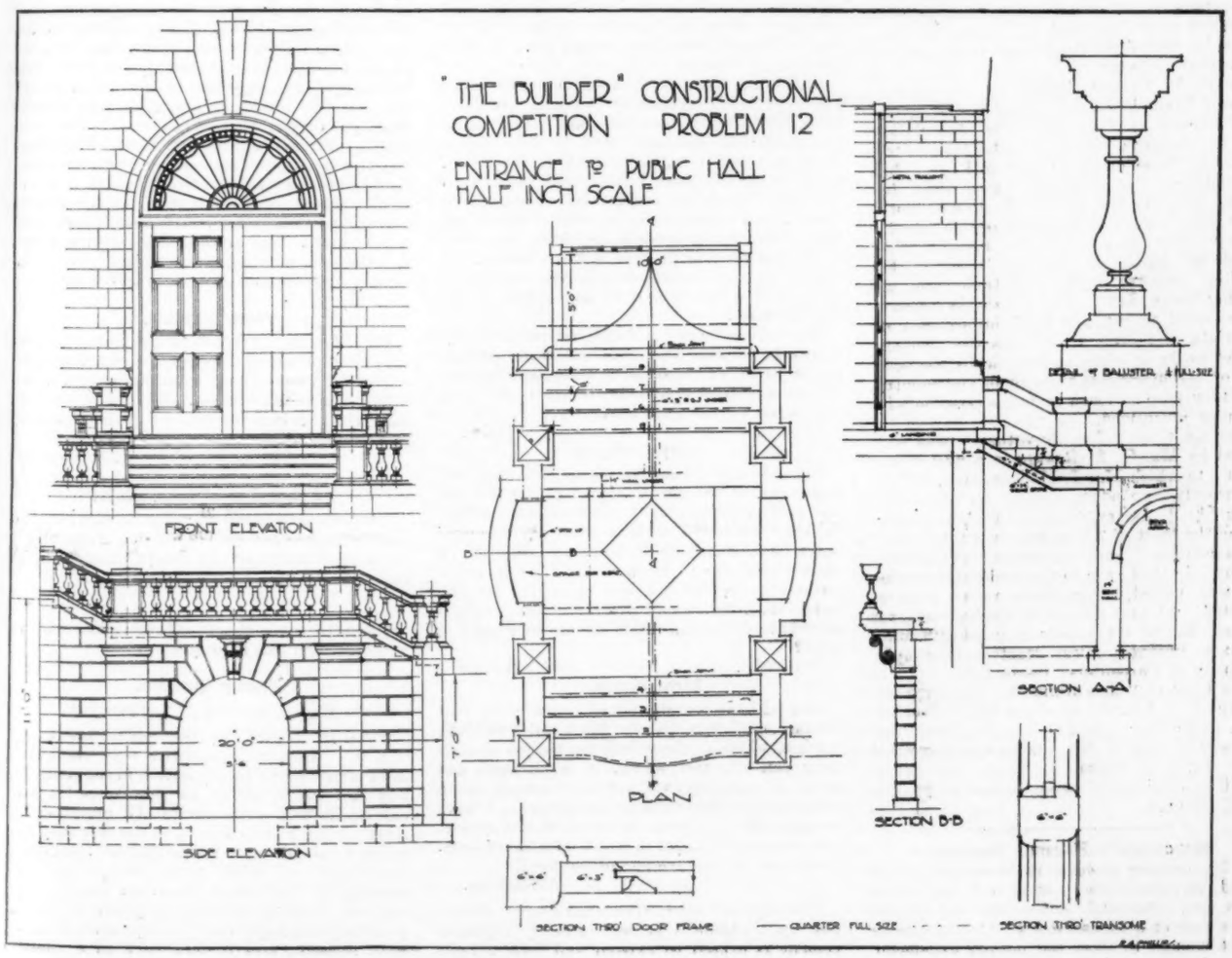
Describe fully, and in proper sequence, the various operations entailed in underpinning the party wall and the front wall, illustrating answer with sketches on a separate sheet of paper.

THE CLERK OF WORKS' ASSOCIATION ANNUAL DINNER

The forty-third annual dinner of the Incorporated Clerks of Works' Association was held at Holborn Restaurant on Saturday last. Major Harry Barnes, F.S.I., presided over a gathering of nearly 400.

Mr. A. J. White (Vice-President, I.C.W.A.), proposing the toast of "The Architects," said the dinners of the Association had been held for more than forty years, with the exception of a few years during the war, at which there had invariably been a prominent architect in the chair. He desired to thank the architects for their continued support, and for the interest they took in the Association. They also appreciated the fact that architects applied more and more to the Secretary when they had a vacancy for a clerk of works—this had become a habit with them. The thanks of the Association were also due to them for their resolve to endeavour to make the insurance of the clerk of works part of the contract. This was their pet grievance, and they were glad to think that they were at last to come into line with everyone else on the building as regarded compensation in case of an accident.

Mr. Herbert A. Welch, F.R.I.B.A., in response, said of all industries perhaps the building industry depended more than any other upon the loyal co-operation of all taking part. He thought perhaps the time was drawing near when a closer co-operation between all the sections of the industry was not only desirable but would probably come to pass.



Winning Design, Problem 12.

By Mr. R. A. Phillips.

Architects felt the closer they all worked together the happier would be their lives and the more success would attend their efforts. He had done his best in that direction, in which he had been ably supported by the chairman and some of his colleagues of the Royal Institute of British Architects. He was happy to say that the Builders' Federation were desirous of establishing a closer co-operation in the industry. He thought any of them who had given a moment's thought to this subject would probably arrive at the conclusion that provided wisdom was exhibited there might in due course be a body established on which there would be represented every section interested in the building industry. At the present moment architects were more or less satisfactorily looking after their side of the business, the builders were doing the same, and the operatives were similarly employed. There were obviously many very intimate matters associated with the various sections of the industry which could only be satisfactorily dealt with by the individual bodies, but there were bigger and wider interests that could be dealt with more satisfactorily by the closer co-operation of all the bodies concerned. The Clerks of Works were looked upon as being the representatives of the architects on the various jobs.

The Chairman proposed "The Incorporated Clerks of Works' Association," and said first of all in the Association they were endeavouring to add to the common stock of their knowledge, and so far as he was able to judge, were doing a great deal towards raising the standard of knowledge amongst the clerks of works of this country and making them more valuable factors than ever in the building industry. Last, but not least, one of the great objects of the Association was to take care of those of their fellows who had fallen upon hard and evil days. In conclusion he wished the Association every success in the years to come.

Mr. A. H. Castle (President), in responding, said through the courtesy of the Worshipful Company of Carpenters the Association held its meetings monthly at the Carpenters' Hall. At those meetings they had a number of prominent lecturers who were only too willing to come and lecture on special work. They were none of them too old to acquire further information, and he thought they would all agree as practical men in the building industry that their trade was advancing every day. The Association always endeavoured to get first-hand information on materials, and often to get this the members visited works as often as possible by the courtesy of manufacturers throughout the country. Also they keep in touch as far as possible with any new inventions.

The toast of "The Surveyors" was submitted by Mr. G. A. Rankin in a well-chosen speech, to which Mr. J. M. Theobald, F.S.I., humorously responded.

Mr. A. J. Dorey (P.P.I.C.W.A.), in proposing the toast of "The Worshipful Company of Carpenters," paid tribute to the Company for the help they gave to the Association during the war period, when their ranks were so depleted. At that time their students stepped in and helped them over a great difficulty. Colonel Preston (Past Master, Worshipful Company of Carpenters) responded.

The toast of "The Builders" was proposed by Mr. P. J. Luxton, to which Mr. F. Thorne, J.P., responded; whilst "The Visitors" was proposed by Mr. J. W. Groom and responded to by Mr. A. J. Smith.

"The Chairman" was proposed by Mr. R. H. Henley.

Manchester's Housing Shortage.

The housing problem in Manchester, it is stated, is more acute now than it was seven years ago. Although houses are being built at the rate of a thousand a year, that number is not enough to meet the normal expansion, and it is estimated that there are still 18,000 required to meet the needs of the population.

ARCHITECTS' & BUILDERS' INQUIRY BUREAU

We are glad to give questions and answers, but cannot accept responsibility for contributed replies, especially on legal matters.

May we appeal to our correspondents to submit their queries on paper of a size easily filed, and written as legibly as possible, or, better still, in typewriting?—Ed.

Main Sewer.

[Reply to "Young Builder," March 26.]

Sir,—Under Section 23 of the Public Health Act, 1875, a local authority has power to enforce the drainage of undrained houses. The owner or occupier of a house must, on notice from the authority, make a covered drain emptying into any sewer which the local authority are entitled to use, and which is not more than 100 ft. from the site of such house. The measurement is taken from the house itself, or some domestic office connected with it. If no means of drainage is within the prescribed distance then the drain must empty into a cesspool.

Under Section 13 of the Act, all existing and future sewers within the district of a local authority, made by any person, vest in, and are under the control of, the authority; and "sewer" includes sewers and drains of every description, with the exception of a drain used for the drainage of one building only or premises within the same curtilage.

Further, under Section 23, it is provided that if in the opinion of the local authority greater expense would be incurred in causing the drains of two or more houses to empty into an existing sewer than in constructing a new sewer and causing such drains to empty therein, the local authority may construct such new sewer, and require the owners or occupiers of such houses to cause their drains to empty therein, and may apportion as they deem just the construction of such sewer among the owners of the several houses.

It follows from the above that the house and shop being erected by "Young Builder," being 150 ft. away from the sewer, is not within the prescribed distance, that if he wishes, as he is entitled to, to connect to the sewer, he must do the work himself and at his own expense, though he cannot be compelled to drain into a sewer, unless, as above stated, the local authority determines the drain should be treated as a sewer for two or more houses, the owners of such contributing to the expense as mentioned. But that does not appear to be the case here.

The local authority is not bound, but probably will take action when two or more persons apply for an extension of a sewer, but even so the owners must contribute to the cost. It is not borne by the local authority.

[Law.

Copper Piping.

Sir,—If any of your correspondents have had experience in the use of copper piping for hot and cold water services in small houses, I should be very interested to hear what their experiences have been both as to speed and cost. I should also like to know if the London water authorities permit the use of copper for the rising main to a small private house; and, if so, what regulations there are as to weight of pipe?

Noves.

Light Cement.

Sir,—I have recently heard a lot about a new cement that has recently been put upon the market, which is about half the weight of ordinary cement, and which, it is claimed, has great advantages over ordinary cement as to adhesion and fire-resisting properties. I have been unable to obtain the name of this article, and am anxious to get in touch with the makers. Could one of your readers oblige me?

Chercher.

[The material referred to is not a light cement, but by a chemical process ordinary Portland cement is caused to expand and form a light substance. We have sent our querist the names of makers of this material.—Ed.]

Preparation of Plans.

Sir,—Would you kindly advise me whether it is contrary to correct professional conduct for an architect to prepare plans for a contractor and to receive payment for them from him? If so, is there any generally accepted scale of charges for this kind of work?

Hungry.

Adhesive Solution Wanted.

Sir,—We should be obliged if you could give us the maker's name of an adhesive solution which, we believe, is known as "Ashfaltim."

Glasgow.

A Rent Act Problem.

[Reply to F. Howlett, March 26.]

Sir,—The house having been let in two flats pre-war, the recent case of Dunbar and Smith applies, and section 2 (1) of the Rent and Mortgage Interest Act, 1923, applies to each flat as a separate dwelling. I do not agree with the last paragraph of your correspondent, "Law." Mr. Howlett will have to satisfy the Court that he obtained "actual possession." In the case of Dunbar and Smith the landlord entered into possession to carry out repairs. It may be the Court would be satisfied that, if the former tenant surrendered the key to the landlord, the latter was then in "actual possession."

Property Owner.

Dance Hall.

I should be obliged if you could give me the superficial area that should be allowed for each person in the design of a dance hall.

R. L.

Lock-up Garages.

Sir,—I propose to build about ten lock-up garages for single cars, and wish to put them up at a low cost but yet to be strong and serviceable. I thought of using clinker concrete blocks, 4 in. thick, for all outside walls, and 3 in. for all partitions. Is it necessary to have iron batten-uprights every two or three feet, or will the concrete blocks be stong enough alone? Any light (daylight) would have to be arranged in the roof, and some particulars of the best way to water-tight the glass would be interesting. Could I make a good roof from the 3 in. concrete blocks placed on iron battens and cemented over with waterproofer? Or would corrugated iron be best? Any hints as to the best methods to adopt in building these garages would be greatly appreciated. H. W. Pexton.

Floor Covering.

Sir,—I have a brick floor which has become uneven in places, and I wish to cover same with rubber or composition. I am not certain which is the best process to use. Which do you consider the cheapest for this job? Is it possible to "buff" the bricks evenly?

G. B. Addis.

A Question of Entomology.

Sir,—Could you tell me where to purchase the insects used in cesspools to cleanse them, and if the gully water (soap and soda) running into the cesspool is detrimental to their living?

J. A. W.

[Perhaps some of our entomological readers will deal with this inquiry.]

Pricing Question.

[Reply to "X.X." April 9.]

Sir,—In regard to the point raised by "X. X." when the quantities were submitted after tendering for incorporation in the contract, any net result of errors discovered in the extensions and costs should be adjusted by a percentage plus or minus, as the case may be, on the total amount. In this instance, assuming there were no other errors except the one referred to, the correct procedure would be to omit the trade in question as priced in detail, plus the percentage that £100 represented on the total amount, and to add back in a similar way.

F. S. I.

THE BUILDING TRADE

SOME OBSERVATIONS ON WORKMEN'S COMPENSATION IN CONNECTION WITH THE AMENDING ACT, 1923.—XIII

Closely connected with the subject we were last considering, the "termination of weekly payments," is the

Redemption of Weekly Payments.

Under paragraph (16) of the First Schedule of the principal Act any weekly payment may be reviewed at the request of either the employer or the workman and on review be ended, diminished, or increased; the amount, in default of agreement, being settled by arbitration. This portion of the above paragraph remains unaffected by the amending Act, and the special amendments introduced into the paragraph by section 24, subsection (6) [section 11 (2) Act 1925], relating to the case of workmen under 21 years of age and by section 15 (section 11 (3) Act 1925) in respect of fluctuations in rates of remuneration have been considered in our tenth and eleventh articles.

Redemption by Lump Sum.

This brings us to another form of terminating weekly payments, that is by commutation by payment of lump sums, under paragraph (17) of the First Schedule to the principal Act. By section 24, subsection (7), of the amending Act [section 13 (*b*) Act 1925] a second proviso has been added to this paragraph, which otherwise remains unchanged. It is as follows: "The provisions of paragraph (17) which fix the amount of the lump sum for which a weekly payment may be redeemed where the incapacity is permanent shall not apply in the case where the injured workman is at the date when the application for the redemption is made under 21 years of age, and where in the case of an injured workman under the age of 21 the lump sum for which the liability to the weekly payment may be redeemed is determined by arbitration under the principal Act the right which if the redemption did not take place the workman would have under the proviso to paragraph (16) of the said Schedule shall be taken into account." This latter reference is to the proviso to paragraph (*b*), as amended by section 24 (6) of the amending Act [section 11 (2) of the Act 1925]. In section 13 (*b*) of the Act of 1925 the paragraph is worded clearer as follows; it concludes, "the right which if the redemption did not take place the workman would have to have the weekly payment increased on a review under subsection (2) of section 11 of this Act shall be taken into account." The meaning of the section is as follows:—Under paragraph (17) where the incapacity is permanent the weekly payments can be redeemed by the payment of a lump sum calculated on the purchase of an annuity equal to 75 per cent. of the annual value of the weekly payment, but in any other case for a lump sum to be settled by arbitration. The section enacts that where the workman is under 21 at the date of the application the first of the above provisions shall not apply, and in the other case where the lump sum has to be settled by arbitration, *i.e.*, cases of partial incapacity, the provisions now inserted in paragraph (16), by section 24, subsection (6), of the amending Act shall be taken into account, that is the problematic earnings of the infant workman had he remained uninjured (see as to this our observations in articles X and XI).

It may here be noticed that paragraph (17) (section 13 (*a*) Act 1925) provides that nothing in the paragraph shall be construed as preventing agreements being made for the redemption of weekly payments by a lump sum, but as we shall show below such agreements must be registered or the liability for the weekly payment continues. This affords a safeguard to infants under the second case as on registration the adequacy of the lump sum payment will be considered. Another point must be mentioned here: under the War Additions Acts, the War additions were not made redeemable by a lump sum. Section 2 of the War Additions Act, 1917, expressly provided that notwithstanding the redemption of the weekly payments under the principal Act the War Addition was to continue payable.

In Costello *v.* Brown (17 B.W.C.C. 136) a workman sustained injury by accident resulting in total incapacity in April, 1914, and was awarded compensation at £1. The War Additions raised this by 15s. a week. On December 23, 1923, the employers filed an application to redeem the payments under the principal Act for a lump sum. The amending Act came into force eight days later. This Act repeals the War Additions Acts, but provides that the War Additions shall continue to apply to a weekly payment payable in respect of total incapacity arising from an accident which occurred on or before December 31, 1923, and "the addition shall for all purposes be treated as if it were part of the weekly payment."

The hearing took place February 18, 1924. The workman contended that under the latter words of the section the employer could only redeem the whole sum of £1 15s. a week, whilst the employers contended that as the War Additions Acts were repealed he could redeem on the basis of the weekly payment of £1 and there his liability ceased. The Court of Appeal held that the Interpretation Act (which we have referred to in our eleventh article under the case Briggs *v.* Thomas Dryden & Son) preserved the right previously existing or accrued, and as the employer had filed his application before January 1, 1924, to redeem the award of £1 that was the sum he was entitled to redeem, but the right of the workman to the 15s. War Addition still continued. This case was followed in Tate *v.* Bradford Dyers' Association (17 B.W.C.C. 209). It therefore appears that where the application to redeem is made after the commencement of the amending Act (January 1, 1924) but the accident happened before that Act came into force, and therefore the new scales of compensation have no application, the workman will be entitled to compensation calculated as under the principal Act plus the War Additions (see our note to Briggs *v.* Dryden, Article XI), but by virtue of the words, "and the addition shall for all purposes be treated as if it were part of the weekly payment," the employer will, if he applies to redeem the weekly payments, not be entitled only to redeem the weekly payment, paying the War Addition separately, but will have to treat the two sums as one. We believe there is no decided case actually to this effect, but the proposition appears hardly to admit of any doubt.

Registration of Agreements and Awards.

It may be convenient here to refer to the registration of agreements and awards although this subject falls within the Second Schedule to the principal Act, paragraphs (9) and (10). Considerable alteration has been effected in these two paragraphs by sections 12 and 21 of the amending Act; the first of the above sections relates to the subject we have just been treating on lump sum agreements. There is a side-note to section 12, "Additional powers of county courts with respect to registration of lump sum agreements." Therefore apparently the section adds to and does not derogate from the existing powers.

It is provided in subsection (1) [section 23 (3) Act of 1925], "Where a memorandum of an agreement for the payment of a lump sum is under the principal Act sent for registration" (paragraph (9) "the registrar, and if in pursuance of the principal Act or this Act the matter is referred to the judge, the judge of the County Court, shall have power, in accordance with rules of court—(*a*) to require either party to the agreement to furnish him either orally or in writing with such information as he may consider necessary or to require the attendance of any of the parties to the agreement before him; (*b*) when the information as to the workman's condition appears to him to be insufficient or conflicting, to require a report as to the workman's condition to be obtained from a medical referee; in the event of either of the parties failing to comply with any requirement of the registrar under this subsection, the registrar may refuse to record the memorandum and refer the matter to the judge, who shall have power to make such order as he may in the circumstances think just." By subsection (2) [section 23 (4), Act of 1925] where it appears from the report of the medical referee that the prospects of the workman's recovery from the incapacity cannot as yet be approximately determined the registrar, or on appeal the judge, may refuse to record the memorandum.

Subsection (3) [section 23 (5) Act of 1925] provides that any such agreement shall disclose the amount, if any, paid or payable under the agreement by the employer to the solicitor of the workman or his dependents, and if the amount appears to the registrar excessive he may, subject to review by the judge, tax such costs, and if they are reduced on such taxation, the amount of such reduction shall either be applied and dealt with for the benefit of the workman or his dependents or paid to the employer or otherwise dealt with as the judge may direct.

Subsection (4) [section 23 (6), Act of 1925] enables the approved society or committee by which sickness or disablement benefit under the National Insurance Act, 1911, or any Act amending the same payable to the workman is administered, to send to the registrar objections to the registration of the agreement for the payment of a lump sum, and in the event of the attendance of any of the parties to the agreement being required the society or committee shall be entitled to appear before the registrar, or if the matter is referred to the judge, before the judge. Subsection (5) [section 23 (7) Act of 1925] provides that rules of court shall be made providing that the registrar or judge shall have power to award costs where there is a hearing under this section or a report from a medical referee is required to be obtained. By paragraph (10) of the Second Schedule to the principal Act [section 25 (1) Act of 1925] agreements for the redemption of weekly payments by a lump sum unless registered do not exempt the person liable to make the weekly payments from liability, unless the failure to register was due to no fault or neglect on their part.

There has been some complication in the law relating to the redemption of weekly payments by lump sums and the registration of such agreements. For some time it was held that paragraph (10) had no application where an agreement had been come to with an adult workman, but where no weekly payments had actually been ascertained, even though the weekly wages paid had entered into the calculation (Ryan *v.* Hartley, 1912, 2 K.B. 150, one of a series of cases), and further it was held that in the case of a lump sum unless it was based on weekly payments actually ascertained it did not fall within proviso (*d*) to paragraph (9) of the Second Schedule, which gives the registrar power to exercise his discretion in considering its terms, but his duty was

simply to record it, Rawlings *v.* Hodgson (12 B.W.C.C. 213). It can be understood that payments can be made under this Act without ascertaining the actual amount of the weekly payments, for the man's earnings may be of such an amount that the maximum allowed by the Act as compensation makes it unnecessary to ascertain the average weekly earnings. It is, however, unnecessary to follow this further, for a recent decision in the House of Lords (Russell *v.* Rudd, 1923 A.C. 309; *The Builder*, April 27, 1923) has over-ruled these decisions. In that case the employers had paid an injured workman the maximum amount of compensation allowed by the principal Act for over six months, but then had entered into an agreement with him to pay a lump sum in satisfaction of all claims. The registrar had refused to record this agreement on the ground that the sum was inadequate and had referred the matter to the judge. The workman in the meantime had applied for arbitration. The county court judge had upheld the view of the registrar as to the agreement, and in the arbitration proceedings had awarded the man a weekly sum. The Court of Appeal had set this award aside and ordered the agreement to be registered, but the House of Lords reversed this judgment and restored the award of the county court judge. To put it shortly, the House held that an agreement to pay a lump sum apart from the provisions of the Act relating to the redemption of weekly payments and the registration of such agreements would be a contracting out of the Act prohibited by section (3), subsection (I), of the principal Act; and that too narrow a construction had been placed by the Court of Appeal on paragraph (9) of the Second Schedule, when it was held only to apply to cases where the weekly payment had previously been fixed by arbitration or agreement, for the workman when injured was, *ipso facto*, entitled to a weekly payment which was capable under the Act of being ascertained immediately, by the processes described in the Act and can be redeemed, but an agreement to redeem must be registered under paragraph (10). We may put the decision in the following way: An agreement to pay a lump sum must come in some way within the provisions of the Act which enables its terms to be considered, otherwise it is void.

We cannot but think it is to be regretted that the consolidating Act has not made this point clear in the light of the above decision by prefacing section 23, subsection (3), with the words: "Any agreement for the redemption of compensation by a lump sum must be registered under the principal Act," as it is, the Act is so drafted that but for the above decision the same confusion might arise as what is intended by the expression, "Where the amount of compensation under this Act has been ascertained" in section 23, subsection (1).

Birkenhead Housing Scheme.

The Town Council has decided to purchase Royden Estate, between Woodchurch and the Borough boundary, for the purpose of a housing scheme. The site covers 450 acres, and its price is £70,000.

Dudley Proposed Nurses' Home.

The Board of Guardians has decided to proceed with the scheme for the erection of £33,500 maternity and nurses' home, on a site adjoining Shaver's End, Dudley, plans for which have been prepared by Messrs. Paine & Hobday, architects.

Manchester Town Hall Extension.

In connection with the contemplated extension of the Manchester Town Hall, the Corporation Improvement and Buildings Committee has prepared a report for presentation to the City Council. Under the Corporation Act of 1920, powers were obtained for the purchase of land and properties. The sanction of the City Council has been already received for the borrowing of £487,717. Of this amount, £437,917 has been expended, leaving a balance of £49,800. In view of recent purchases, the authority of the Finance Committee and City Council is desired for borrowing a further sum of £150,000.

DILAPIDATIONS AND WASTE.—XIV

By W. T. CRESWELL,
Lic.R.I.B.A.; Associate (late Fellow) Surveyors' Institution; F.R.San.I.; Barrister-at-Law.

ECCLESIASTICAL DILAPIDATIONS.—(II.)

Inspection of Benefices.

Under section 17 of the Ecclesiastical Dilapidation Measure, 1923, when a Diocesan Dilapidations Board has been constituted for any area, it is one of its functions to cause, first inspections to be made of all the buildings of each benefice in that area within a period of seven years from the passing of the Measure, and if any benefice is vacant or becomes vacant, or is under sequestration, the buildings belonging to such benefice, in respect of which no first inspection has been made, are to be inspected forthwith. But no first inspection shall be made save in the case of an inspection on vacancy or sequestration without the consent of the incumbent if he is protected by an exemption certificate given before the passing of the Measure under sections 46 and 50 of the Ecclesiastical Dilapidations Act, 1871, by which he is exempt for five years from the date of the certificate from liability to repair, except for wilful waste and loss or damage by fire.

New buildings or buildings acquired for the benefice after the passing of the Measure are also to be first inspected immediately after such new buildings have been erected or acquired.

On the expiration of every quinquennial period of exemption the Board shall, within six months following the expiration thereof, direct another inspection of the benefice to be made.

Reports of the Surveyor.

Under section 18 of the Measure the surveyor appointed under the Board is to base his report on the obligation of the person lawfully bound to keep or have kept the buildings in good or substantial repair, setting forth:—

(*a*) The repairs needed in detail, distinguishing ordinary repairs from structural repairs, and as to the latter, those which admit of delay and those which do not.

(*b*) The estimated cost of all such repairs respectively.

(*c*) Except in respect of dilapidations caused by deliberate action or gross negligence of the incumbent within what time (not exceeding twelve months) (1) the ordinary repairs should be carried out, (2) the repairs that do not admit of delay (called immediate structural repairs) should be carried out, (3) the remaining structural repairs (if any) should be carried out.

(*d*) The sum which will be required to meet the cost of: (1) Ordinary repairs during the succeeding five years; (2) those structural repairs that are not immediate structural repairs, as above referred to.

(*e*) The sum for the reinstatement of each of the buildings in the event of its being destroyed by fire.

(*f*) The surveyor's reason for classifying repairs as structural repairs or otherwise.

The surveyor is to send a copy of his report to:—

(*a*) The incumbent.

(*b*) The sequestrator, if the benefice is under sequestration.

(*c*) In the case of a first inspection of the benefice to any previous incumbent of the benefice not protected by an exemption certificate still operative, under sections 46 and 50 of the 1871 Act.

The copy of the report is to include copies of sections 20 and 21 (1) of the Measure, also a notice that the person to whom it is sent may send a tender for the carrying out of the work detailed or any part of it, to the Board within fourteen days.

The surveyor is to certify to the Board when and to whom and in what manner the copies and notices have been sent.

The sections referred to are to the following effect:—

Section 20. The person responsible for repairs may, within one month, object to the Board in writing on any grounds of fact or law. The Board can, on objection being made, require a sum not exceeding £5 to be paid by the person objecting, to defray cost of inquiry into such objection; and if such sum is not paid then it is deemed there is no objection The Board may, however, in certain circumstances decide to defray the expenses itself.

The Board is to investigate the objections, and may require the attendance of the incumbent and the surveyor at the inquiry, and any of its members may inspect the benefice, or the Board may invite the Archdeacon to do so on its behalf. It may also obtain professional or other advice. Where the Board finds the objection is made good it shall repay all or part of the £5 deposited as above.

Section 21 (1).—If no objection is made, then, after one month from date of report, or if an objection has been made then as soon after as the Board determines, the Board is to make an order confirming this aspect of the surveyor without variation, or with such variation as the Board may in its discretion decide to make.

Under Section 31 of the Measure it is the duty of an incumbent to execute the repairs, unless the benefice is under sequestration, when it is the duty of the sequestrator.

Under Section 39 of the Measure the Central Authority (*i.e.*, Queen Anne's Bounty) employs the Insurance Rate paid in respect of a benefice, in insuring the buildings against loss or damage by fire; and when the insurance office pays the money for the loss or damage instead of reinstating, the Central Authority applies the insurance money to the reinstatement of the buildings.

Houses, &c., of Archbishops, Bishops, and Other Dignitaries.

As before mentioned, certain sections of the Ecclesiastical Dilapidations Act, 1871, were not repealed by the Measure. Under Section 25 of the Act of 1871 it is lawful for any archbishop or bishop, or the holder of any dignity or office in any cathedral or collegiate church to employ any approved surveyor to inspect and examine any house of his residence, or any other building appurtenant thereto, or belonging to his office which he is by law or custom bound to maintain in repair. Under Section 26 of the Act the surveyor is to report the works needed and at or within what times such works or any particular part or parts thereof ought to be executed. Under Section 27 a certificate of the surveyor that the works have been duly executed is conclusive evidence of their execution, and Section 28 provides for such certificate exempting the archbishop or bishop, or holder of the dignity or office as the case may be, from liability for repairs for the five succeeding years, except in the case of wilful waste or damage by fire.

It may be of interest to state here that an action in respect to the negligence of an ecclesiastical surveyor provides a precedent giving a ruling on negligence of architects or surveyors in general. The case is Jenkins *v.* Betham (1855, 15 C.B. 168), where it was determined that a surveyor of ecclesiastical property, though not bound, perhaps, to possess a precise and accurate knowledge of the law, as regards the valuation of dilapidations as between an outgoing and an incoming incumbent, yet is bound to bring to the discharge of the duties which he undertakes a knowledge of the general principles which belong to the subject, and of the distinction established between valuations made in cases of outgoing and incoming tenants, and outgoing and incoming incumbents.

Paddington Proposed Public Hall.

Paddington Borough Council has in hand a proposal to develop the Lodge site in Porchester-road at a total estimated cost of nearly £100,000, the plans to be prepared by the Borough Architect, Mr. H. Shepherd, F.R.I.B.A. The scheme includes the erection of a public hall to seat 1,000, an open access lending library, and five shops.

THE NATIONAL SAVINGS MOVEMENT

We publish below copy of a letter which has been sent out to all its members by the London Master Builders' Association. We are heartily in agreement with the Council's action in recommending the formation of Savings Associations to the consideration of their members, and we hope this movement will receive the strongest support by the building trade, not only in London, but throughout the country.

As the letter states, there are more than 22,000 Savings Associations at work in the country. This number is an eloquent testimony to their value as an incentive to the practice of thrift, and of the manner in which they are welcomed by masters and men alike.

Up to March 27 last 765,287,575 National Savings Certificates had been sold. This represents the enormous sum of £597,839,811, made up principally by the accumulated savings of people of small incomes and limited surplus funds. This means, in effect, that throughout the country people are taking advantage of the facilities which Savings Associations bring right to them of saving up small surplus sums which might otherwise be frittered away. In this way they are gradually accumulating sums of money upon which they have the satisfaction of knowing they will be able to lean in times of emergency or distress.

The National Savings movement, in doing this work, is performing a service which is recognised by the leaders and rank and file of all phases of our social life as one of great social and moral force. Thrift has the effect of developing the desirable qualities of industriousness, steadiness and contentment; of removing fear of the future and instilling a sense of security and self-respect. In practice the Savings movement is strengthening and building up the idea of "Service" throughout the country, and giving people a deeper interest in themselves and in their means of livelihood, and intensifying the characteristics of good citizenship.

A Savings Association in a works or shop makes saving easy, as it brings the facilities for so doing right to hand, without, moreover, entailing a great deal of work or interfering with the ordinary routine. There is much room in the building trade for the formation of Savings Associations, and every one set up will be another brick in the building up of national prosperity and of individual contentment.

The National Savings Committee, Princes House, Kinsgway, W.C.2, furnish, free of cost, full particulars of Savings Associations and how to set them up. Communications to the above address need not be stamped.

Copy of Letter sent to Members of the London Master Builders' Association.

March 26, 1926.

Dear Sir(s),—At the last meeting of the Council a letter from the National Savings Committee soliciting support in the formation of Savings Associations among the employees of members of the Association was discussed. *The Council unanimously decided to recommend the suggestion to the favourable consideration of members.*

The general purpose of the National Savings Committee is to promote wise spending and saving. To this end, it sets up Savings Associations in places where people meet together regularly, such as offices, works, &c. These Associations offer opportunities for saving by the purchase of National Savings Certificates—an absolutely safe investment in a National security—by small instalments and on advantageous terms. By this process the National Savings Committee helps to direct the general spending of the nation into the most profitable channels, giving the individual an incentive to real saving and thereby benefiting both him and the community.

There are several very simple schemes for conducting Savings Associations, any one of which may be adopted, and the National Committee provides, free of cost, all the material necessary. There are already over 22,000 Savings Associations in operation throughout the country, including a number in building firms and their promotion is strongly advocated by Trade Associations and other bodies in the general interests of the country.

If you will fill in the enclosed postcard and return to the National Savings Committee, the Committee will send you full particulars and will render you every possible assistance.

Yours faithfully,

(Signed) W. J. Rudderham, Secretary.

THE MAKING-UP OF NEW AND PRIVATE STREETS

The case reported in our issue of March 26, relating to the making-up of three private streets at New Malden, raises a question of great importance to property owners. The Coombe and Malden Urban District Council were taking steps under the Private Street Works Act, 1892, to make up the streets in question, and, according to the report, it was stated by counsel for the Urban Council, they had adopted a general policy of making-up the roads in reinforced concrete. The streets in question appear to have led into the new Kingston by-pass main road, but themselves to have had no character of arterial roads, as there was some evidence in the case that they were *culs-de-sac*.

The owners objected that the local authority were making demands upon them far in excess of the requirements of those streets, and, in fact, were saddling them with expenses designed to make the streets last for so long a period that, practically, the owners were being called upon to provide for posterity, and that the specifications were in excess of the specification recently put forward by the Ministry of Health. The specifications, it was stated on behalf of the Council, worked out at sums varying from 34s. 11½d. to 34s. 0½d. a foot. The Magistrates decided that the specification should be amended to provide for roads similar in character to the existing portions of the roads; water-bound macadam, with footpaths from 4 ft. to 5 ft. in width, of gravel, instead of 8 ft., with 2 in. artificial stone slabs, so far as we follow the report.

The case raises issues of great importance which, so far as we are aware, have not come before the High Court since the case of Chester Corporation *v.* Briggs (1924, 1 K.B. 239; *The Builder*, March 28, 1924). In that case the specification of the works was based upon the fact that the road to be made up would, in future, relieve traffic on another first-class main road (but no such contention was put forward in the case we are discussing); the frontagers objected, raising nearly every objection that can be raised under section 7 of the Street Works Act, 1892, and the Justices held that it was unreasonable that the frontagers should bear the whole cost of such works, but instead of finding under section 7, paragraph (*d*) that the works were unreasonable or that the estimated expenses were excessive, the Justices made it part of their order, approving the specifications, that the urban authority should, under section 15, contribute to the expenses 15 per cent. The Divisional Court held that the Justices had no power to direct that the urban authority must contribute to the expenses; that was a question to be determined by resolution of the Council, and the effect of their order was either to amend a resolution not before the Justices or to pass a resolution for the urban authority, and the case was remitted to the Justices; but the Court intimated that under section 7, paragraph (*d*), the Justices would be entitled to consider whether the works were reasonable from the point of view that it was reasonable that they should be carried out at the frontagers' expense. (See *per* Mr. Justice Salter.)

That course appears to have been adopted by the Justices in the case we are considering, but the case appears to us to raise a point worthy of the attention of the Minister of Health, especially in these days, when it is desired to encourage the development of estates and to increase building. It can hardly be said that these objects are furthered if a charge for making up the roads of from 34s. to 35s. per foot is levied upon persons who happen to be the owners of properties fronting on the street at the time when the works are completed, on a basis which will relieve the ratepayers from any expense for the roads when they are taken over for a very long and indefinite period.

Under section 20 the greater part of the owners on the basis of value can compel the urban authority to take over the street when made up, and therefore the local authority has a direct incentive to make-up streets at the owners' expense, so that they shall not be called upon, out of the rates, to expend anything upon them for as long a period as possible. There is a discretion in the local authority also whether they will contribute or not to the expenses incurred. Local authorities very naturally are struggling to keep down their rates, and it may be questioned whether, in such circumstances, an absolute discretion should be conferred upon them whether or not they shall contribute to the works.

We submit that when it is desired to make the works of a permanent character either to relieve another road or to relieve the ratepayers from expense for a very long term of years, the reasonable course would be that, as the community is to benefit, the whole burden should not be placed upon frontagers, but a contribution should be made by the local authority. It is more than doubtful whether there is an appeal to the Minister of Health under the Private Street Works Act as regards any matter at all, and certainly where the appeal is based on a matter left to the discretion of the local authorities the case is even more open to question, and we suggest that a direct appeal to the Minister should be given on this question. The order of the Minister could be confined to the character of the works so as not to involve interference with the actual finance of the local authority.

There is another point left to the discretion of the authority under the Private Street Works Act, as to whether, under section 10, they shall avail themselves of their powers to include premises which do not actually front or abut on the street to be made up, but which derive benefit from the works. We cannot enter into this question here, but we propose publishing shortly a short series of articles on the question of making-up new and private streets.

£250 Concrete Bungalow.

A five-room demonstration bungalow has been erected at St. Paul's Cray, Kent, which the inventors, Mr. W. Smithers, M.P., and Mr. T. H. Nash, Chairman of the local parish council, claim could be sold at the price of £250. A concrete block is used which combines density on the outside to withstand the weather, a porous centre, and an inner side possessing a surface that will take either distemper or paper. The raw material was house refuse, which had been deposited long enough to allow the vegetable matter to become decomposed. This was put through a ¼ in. screen. The matter which would not pass through was washed and used for the inner side of the block. The outside of the block was made of broken clinker and ashes that would pass through the screen. The fine material, mixed in the proportion of six to one of cement, was placed at the bottom of the mould; the centre portion was filled with coarser material, and while still in a wet condition was given a thin dressing of three parts of fine ashes to one of Keene's cement. Within a few hours it was possible to slacken the bolts. It is stated that the porous character of the centre has been demonstrated to do away with the condensation. The blocks used are 4 ft. and 3 ft. long, 1 ft. high by 6 in. thick. They were cast four at a time on a thin frame. The bungalow measures 24 ft. by 28 ft. and everything, including fittings, has now been standardised and is capable of being erected by unskilled labour. It is stated that two men could make the blocks and erect two cottages in something like six weeks.

NEW BUILDINGS IN LONDON

Albemarle-street.—The old buildings at the junction of Albemarle-street, W.1, with Piccadilly, W.1, are now being pulled down to make way for the new West End branch of the Westminster Bank, Ltd. Messrs. H. Sabey & Co., Ltd., demolition and excavation, 7, South Wharf, Paddington Basin, W.2. Mr. W. Curtis Green, A.R.A., architect, 5, Pickering-place, S.W.1.

Balham.—A block of shop and flat property is to be erected at No. 191, Balham High-road, S.W., comprising nine shops with showrooms Messrs. North, Robin & Wilsdon, F.R.I.B.A., architects, 35–39, Maddox-street, W.1.

Catford.—Lord Forster has promised to build a lady chapel at the proposed new Church of St. John's, at Southend Village, S.E., and has given £5,000 towards the total cost of the church, which is estimated at £35,000. Sir Charles Nicholson, Bart., F.R.I.B.A., architect, 2, New Square, Lincoln's Inn, W.C.2.

Charing Cross-road.—The remaining portion of the old premises of Messrs. Crosse & Blackwell's, Ltd., in Charing Cross-road and Soho-square, W.1, has been acquired by a syndicate for conversion into a picture theatre, with accommodation for 3,000 persons, large dance hall, restaurant, and cafés. The building is now being gutted. Messrs. Griggs & Sons, builders, 100, Victoria-street, Westminster, S.W.1. Messrs. St. Mary's Wharf Cartage Co., Ltd., demolition, South Wharf, Paddington, W.2. Mr. E. A. Stone, F.S.I., architect, 20, Berkeley-street, W.1.

Cheapside.—No. 139, Cheapside, E.C.2, has been acquired by Messrs. G. A. Dunn & Co., Ltd., hat manufacturers, for new showrooms. Messrs. Charles Spreckley & Co., Ltd., Phœnix-place, Gray's Inn-road, W.C.1, alterations and shop fittings.

Chelsea.—The City & West End Properties, Ltd., Bush-lane House, Bush-lane, Cannon-street, E.C.4, have acquired for development the properties known as 1–2, Carlyle Mansions, in Cheyne-walk, S.W.

Chiswick.—A building site of over 2½ acres, situated at the junction of the Great West-road with Chiswick High-street, W., has been sold. Mr. A. A. Stanford, chartered surveyor, Great West-road, Chiswick, W.4.

City.—The Linoleum Manufacturing Co., Ltd., 6, Old Bailey, E.C.4, have decided to build, for the use of their female staff, a fully-equipped pavilion, facing the recreation ground.

City.—A site of about 15–20 acres is to be acquired within easy reach of the City for the erection of large factory buildings. Messrs. Henry Butcher & Co., surveyors, 63–64, Chancery-lane, W.C.2.

Clapham.—Plans have been approved for a factory building, on a site at Clapham Lodge, Clapham Common, S.W. Messrs. Yetts, Sturdy & Usher, architects, 115, Moorgate, E.C.2.

Deptford.—Extensive land and buildings in Childers-street and Arklow-road, S.E., have been acquired by Messrs. J Stone & Co., Ltd., engineers, in connection with the enlargement of their brass, copper and iron works.

Denmark-hill.—With regard to the paragraph on the proposed new officers' training and residential college for the Salvation Army, which appeared in our issue for April 2, the architects should have been given as Messrs. Alexander Gordon, G. J. Morriss Viner, and Sir Giles Gilbert Scott, R.A., associated architects. The address of Messrs. Gordon & Viner is 23, Knightrider-street, E.C.

Edgware-road.—Plans have been prepared for a factory in Edgware-road, for Messrs. Watts & Co.

Fulham.—Large premises in North End-road, S.W., are to be adapted as a branch for Messrs. F. W. Woolworth & Co., Ltd., Kingsway, W.C. Mr. William Priddle, architect.

Gray's Inn-road.—The branch premises at the corner of Gray's Inn-road and Holborn Bars, W.C., are to be enlarged for Messrs. Barclay's Bank, Ltd. Messrs. James Smith & Sons, Ltd., builders, High-street, South Norwood, S.E.25.

Greenwich.—Towards the estimated cost—£65,000—of the building and equipment of the new Roan School for Boys at its new site at Maze Hill, S.E., the L.C.C. propose to make a grant of £60,000. Sir Banister Fletcher, F.R.I.B.A., architect, 1, King's Bench-walk, Temple, E.C.4.

Gresham-street.—New branch premises are to be provided in part of the ground floor of Keith House, at the corner of Gresham-street and Wood-street, E.C.2, for Messrs. Barclay's Bank, Ltd. Messrs. Ashby & Horner, Ltd., builders, 8, Aldgate E.1. Messrs. Richardson & Gill, FF.R.I.B.A., architects, 41, Russell-square, W.C.

Hackney.—A row of shops and offices are being erected in Mare-street, E. Messrs. Walters & Blake, Ltd., builders, Seymour-avenue, N.17.

Haymarket.—Excavations are in progress at No. 54, Haymarket, W.1, preparatory to the building of large office and shop premises. Messrs. F. G. Minter, Ltd., builders, Ferry Works, Putney, S.E. Messrs. Hillier, Parker, May & Rowden, surveyors, 27, Maddox-street, W.1.

High Holborn.—Alterations and improvements are being effected at the High Holborn branch premises of the Westminster Bank, Ltd. Messrs. Thomas Rider & Son, builders, 181, Union-street, Lambeth, S.E.1.

Highgate.—Fairseat House, a large house on Highgate Hill, N, has been leased to the Channing House School for Girls, Highgate, for use as an annexe. Alterations and redecorations are to be carried out. Messrs. Prickett & Ellis, surveyors, High-street, Highgate, N.6.

Holborn.—The contract for building alterations to the First Avenue Hotel, acquired by Mr. Nicholas Frederick, has been placed with Messrs. H. Darby & Son, builders, 7, Lea Bridge-road, E.10. Messrs. Stone Preservation Co., Ltd., stone cleaning, &c., 10, North Mews, Gray's Inn, W.C.1. Messrs. Waring & Gillow, Ltd., decorations and furnishings, Oxford-street, W.1.

Kensington.—The Kensington, Fulham and Chelsea Hospital in Richmond road, Earl's Court, S.W., is making an appeal for £100,000 required to construct a new hospital on a site at the junction of Richmond-road and Finborough-road, S.W., accommodating 112 beds. Sir Aston Webb, P.-P.R.A., and Mr. Maurice Webb, F.R.I.B.A., architects, Queen Anne's-gate, Westminster, S.W.1.

Kingston.—A row of seven large shops, with a billiard hall above and a large garage at the rear, is to be erected on a corner site in the High-street. Mr. A. Laver, surveyor, New Bridge-street, E.C.

Kingston.—Premises are to be erected on a site adjacent to the market-place. Messrs. C. Oldridge & Sons, builders, London-road, Norbiton, S.W.

Lambeth.—New factory premises with offices adjoining are to be built in Southwark-street, S.E.1, for Messrs. S. Wolff & Co., Ltd. Messrs. Chessums, Ltd., builders, Imperial Works, Portland-road, N.15. Messrs. Archibald D. Dawnay & Sons, Ltd., steelwork, Steelworks-road, Battersea, S.W. Messrs. Wallis, Gilbert & Partners, architects, 29, Roland-gardens, Kensington, S.W.7.

Leyton.—A group of houses are to be erected upon an estate in Pulleyns-avenue, E. Messrs. Leyton Building Co., builders, Leyton.

Lincoln's Inn.—A house in Portugal-street, W.C., adjoining the College of Estate Management, 35, Lincoln's-inn Fields, W.C., is to provide a site for a new wing to contain lecture rooms, reading rooms, &c. Messrs. Greenaway & Newberry, FF.R.I.B.A., architects, Parliament Mansions, Victoria-street, Westminster, S.W. 1.

Marylebone.—The governors of the Elizabeth Garrett Anderson Hospital for Women and Children, in Euston-road, N.W.1, have decided to build, as part of the £75,000 extension scheme, a nurses' home as a war memorial. A children's ward is also to be erected. Sir Brumwell Thomas, hon. architect, F3, The Albany, Piccadilly, W.1.

Marylebone.—New head offices, etc., are to be erected on a site in New-street, W.2, for Mr. Horace J. Hewlitt, F.S.I., architect and surveyor, 43, Salisbury-road, Maida Vale, N.W.6.

Milk-street.—Messrs. Garrett, White & Poland, surveyors, 42, Poultry, E.C. 2. are acting for a client who proposes to build new showrooms and office premises on the site of Nos. 31-33, Milk-street, Cheapside, E.C. 2. Messrs. Robert Angell & Curtis, architects, 133, Regent-street, W. 1.

Newgate-street.—The London General Assurance Co., Ltd., have acquired Nos. 27–28, Newgate-street, E.C. 4, for new offices. Messrs. James Jennings & Sons, Ltd., builders, 42, Leman-street, E. 1. Messrs. Holbrook's Electric Service Co., Ltd., electrical installation, 1, Foster-lane, E.C. 2.

New Oxford-street.—The freehold of the New Oxford Theatre, in Oxford-street and Tottenham Court-road, W. 1, has been purchased by Mr. A. E. Abrahams, 25, Shaftesbury-avenue, W. 1, and extensive developments are understood to be projected.

New Oxford-street.—New premises are to be adapted as an extension for Messrs. Mentone, Ltd., milliners, at the corner of New Oxford-street and Dyott-street, W. 1. Messrs. Charles Spreckley & Co., Ltd., builders, Phœnix-place, Gray's Inn-road, W.C.

Oxford-street.—The rebuilding of the eastern block of their premises in Oxford-street, W.1, is to be considered by the directors of Messrs. D. H. Evans & Co., Ltd., drapers.

Palmer's Green.—Messrs. Church Army Housing, Ltd., have acquired an estate where it is proposed to lay out a new street with about 60 new houses. Messrs. A. & J. Soutar, architects, 8, King William-street, Strand, W.C.2.

Parmiter-street.—A block of self-contained flats is to be erected in Parmiter-street, Bethnal Green, E., at a cost of about £25,000. Mr. E. C. P. Monson, F.R.I.B.A., architect, Finsbury Pavement House, Moorgate, E.C. 2. Mr. W. Simms, builder.

Piccadilly.—New shops and showrooms for Messrs. Meakers, Ltd., outfitters, Cheapside, E.C., are to be built at the corner of Piccadilly and Albany Court-yard, W. 1. Messrs. Greenham, Ltd., demolition and excavation, Worton-road, Isleworth. Messrs. Bower & Gibbs, architects, 14, Riding House-street, W. 1.

Piccadilly-circus.—The second section of the rebuilding scheme of Messrs. Swan & Edgar, Ltd., drapers, is shortly to be put in hand, and contract for the demolition work has been given to Messrs. W. Marshall, Ltd., Newgate, Peckham, S.E. 15. Messrs. Higgs & Hill, Ltd., builders, Crown Works, South Lambeth-road, S.E. Mr. J. J. Joass, F.R.I.B.A., architect, 10, Old Burlington-street, W. 1.

Praed-street.—Renovations and redecorations are being carried out at the Paddington Station Hotel, W. 2, by the Great Western Railway Co. Messrs. Campbell Bros., decorators, 28, Albert-embankment, S.E.

Regent-street.—Oddenino's Restaurant has closed for rebuilding. The new premises will include service flats, &c., in addition to a restaurant and grill room. Mr. T. H. Smith, 17-18, Basinghall-street, E.C. 2, and Messrs. Yates, Cook & Darbyshire, 43, Great Marlborough-street, W. 1, associated architects. The rebuilding includes No. 58, Regent-street.

Regent-street.—The steel frame work is being erected for the head offices in Regent-street and Glasshouse-street, for the County Fire Office. Messrs. Redpath, Brown & Co., Ltd., steelwork, 3, Laurence Pountney-hill, E.C. 4. Messrs. Holloway Bros. (London), Ltd., builders, Bridge Wharf, Grosvenor-road, S.W. 1. Messrs. William Woodward & Sons, 15, Great James-street, W.C.1 and Messrs. W. G. & H. A. Newton, 4, Raymond's buildings, Gray's Inn, W.C. 1, joint architects.

St. James's.—Marlborough House, Pall Mall, S.W.1, to be used in due course as the residence of the Prince of Wales, is to be modernised and enlarged, incorporating new heating and lighting systems redecorations, &c. H.M. Office of Works, architects, Storey's-gate, Westminster, S.W.1.

St. James's.—Alterations and enlargements are being made at the shops and showrooms in Duke-street, S.W.1, of Messrs. Alfred Dunhill, Ltd., pipe and tobacco manufacturers.

LAW REPORT

Painters and Their Rights During Flooring and Building Operations.

A curious point of importance to painters, builders and floorers, with reference to their rights to use portions of a building during flooring operations, was decided by Judge Snagge in the Bow County Court recently. The plaintiffs in the action were Messrs. George Parker & Sons, Ltd., of 124, Sumner-road, Peckham, S.E., builders and decorators, and they sued Mr. Joseph F. Ebner, of Stewart-road, E., mosaic and parquetry floorer, for an indemnity covering the amount of compensation they had paid under the Workmen's Compensation Act to one of their painters named Mafflin, who was injured, it was alleged, through the negligence of one of the defendant's servants whilst plaintiffs were carrying out building and decorating work in a dance hall where the defendants were doing the flooring. The injured man was crossing over some joists about one foot apart where some flooring was to be laid, when he slipped over an iron timber "dog" which had been knocked into a joist by one of the defendant's men. He was laid up for a considerable time and had been paid £52 10s. in compensation, besides which there had been other costs incurred as well as solicitor's expenses, which in all came to £71 16s. 5d., which they were now claiming.

Mr. John Russel, appeared as counsel for the plaintiffs, and Mr. Duckworth, barrister, for the defendant.

Edward Mafflin, a painter, gave evidence, and said that the defendant's men went on working after they had left, and when he got there in the morning he had no knowledge that the "dog" had been left there. In cross-examination, he said that he had been there for a fortnight and the defendant's men had been there all the time. There had been no gangway made of planks, so they could not cross over to the steps. No painter would look for "dogs" in joists where there were flooring men working, but they were allowed to cross over these joists because of the rush painting work. They could not go round the building because it was all soft concrete.

Another painter gave evidence and said there were no planks down at the time of the accident, but there were after. Two other men tripped over the "dog" in spite of the fact that he dabbed it with white paint.

For the defence, the foreman of the works said he gave permission to the painters to use the floor and they could have then got outside to their steps; the concrete was not wet. He never gave permission for the painters to go where flooring operations were being carried out. He saw them crossing, but they did it at their own risk; the board was taken up after the accident.

The supervising foreman said that painters were never supposed to cross an unfinished floor and he would have told a painter of it had he seen him doing it. If it became necessary for them to cross, they should have got permission, and obtained boards to make a gangway.

Judge Snagge, in giving judgment, said that the defence raised was that there was a safer way of getting to these steps and the painting work, but he thought it was impossible to maintain that defence. A "dog" had been left there, and it was not a usual place to leave one, and therefore it was an unexpected thing, and he had to find that it was in the nature of a trap. He must therefore find for an indemnity for the amount paid to the man, and costs.

The parties then agreed that the amount of compensation should be £50, and with Court costs and medical expenses this came to £56 6s. 3d. It was then agreed that the solicitor's costs should be £10, and Judge Snagge accordingly entered judgment for the plaintiffs for £66 6s. 3d.

Sugar Beet Factories.

There were ten sugar beet factories in this country at the end of 1925 and five more will be erected this year, states the report of the British Sugar Beet Society, read at the annual meeting at the Hotel Victoria.

RATES OF WAGES IN THE BUILDING TRADE

Every endeavour is made to ensure accuracy, but we cannot be responsible for errors.

	Masons.	Bricklayers.	C'rp'ters. Joiners.	Plasterers.	Slaters.	Plumbers.	Painters.	Lab'rers.
Aberdare	1/8	1/8	1/8	1/8	1/8	1/8	1/8	1/3½
Accrington	1/8	1/8	1/8	1/8	1/8	1/8	1/8	1/3½
Altrincham	1/8	1/8	1/8	1/8	1/8	1/8	1/8	1/3½
Ashton-under-Lyne	1/8	1/8	1/8	1/8	1/8	1/8	1/8	1/3½
Barnsley	1/8	1/8	1/8	1/8	1/8	1/8	1/8	1/3½
Barrow-in-Furness	1/8	1/8	1/8	1/8	1/8	1/8	1/8	1/3½
Barry	1/8	1/8	1/8	1/8	1/8	1/8	1/8	1/3½
Bath	1/6	1/6	1/6	1/6	1/6	1/6	1/6	1/1½
Bedford	1/6	1/6	1/6	1/6	1/6	1/6	1/6	1/1½
Birkenhead	1/9	1/9	1/8½	1/9	1/9	1/9	1/8½	1/4
Birmingham	1/8	1/8	1/8	1/8	1/8	1/8	1/8	1/3½
Bishop Auckland	1/8	1/8	1/8	1/8	1/8	1/8	1/8	1/3½
Blackburn	1/8	1/8	1/8	1/8	1/8	1/8	1/8	1/3½
Blackpool	1/8	1/8	1/8	1/8	1/8	1/8	1/8	1/3½
Bolton	1/8	1/8	1/8	1/8	1/8	1/8	1/8	1/3½
Bournemouth	1/6	1/6	1/6	1/6	1/6	1/6	1/6	1/1½
Bradford	1/8	1/8	1/8	1/8	1/8	1/8	1/8	1/3½
Brentwood	1/6½	1/6½	1/6½	1/6½	1/6½	1/6½	1/6½	1/2
Bridgwater	1/5	1/5	1/5	1/5	1/5	1/5	1/5	1/1
Brighton	1/6	1/6	1/6	1/6	1/6	1/6	1/6	1/1½
Bristol	1/8	1/8	1/8	1/8	1/8	1/8	1/8	1/3½
Burnley	1/8	1/8	1/8	1/8	1/8	1/8	1/8	1/3½
Burton-on-Trent	1/8	1/8	1/8	1/8	1/8	1/8	1/8	1/3½
Bury	1/8	1/8	1/8	1/8	1/8	1/8	1/8	1/3½
Cambridge	1/6	1/6	1/6	1/6	1/6	1/6	1/6	1/1½
Cardiff	1/8	1/8	1/8	1/8	1/8	1/8	1/8	1/3½
Chatham	1/5½	1/5½	1/5½	1/5½	1/5½	1/5½	1/5½	1/1½
Chelmsford	1/5½	1/5½	1/5½	1/5½	1/5½	1/5½	1/5½	1/1½
Cheltenham	1/6	1/6	1/6	1/6	1/6	1/6	1/6	1/3½
Chester	1/8	1/8	1/8	1/8	1/8	1/8	1/8	1/3½
Chesterfield	1/8	1/8	1/8	1/8	1/8	1/8	1/8	1/3½
Colchester	1/5½	1/5½	1/5½	1/5½	1/5½	1/5½	1/5½	1/1½
Coventry	1/8	1/8	1/8	1/8	1/8	1/8	1/8	1/3½
Crewe	1/6½	1/6½	1/6½	1/6½	1/6½	1/6½	1/6½	1/2
Darlington	1/8	1/8	1/8	1/8	1/8	1/8	1/8	1/3½
Derby	1/8	1/8	1/8	1/8	1/8	1/8	1/8	1/3½
Doncaster	1/8	1/8	1/8	1/8	1/8	1/8	1/8	1/3½
Dudley	1/7½	1/7½	1/7½	1/7½	1/7½	1/7½	1/7½	1/2½
Durham	1/8	1/8	1/8	1/8	1/8	1/8	1/8	1/3½
E. Glam. (Mon. Vall.)	1/8	1/8	1/8	1/8	1/8	1/8	1/8	1/3½
Eastbourne	1/6	1/6	1/6	1/6	1/6	1/6	1/6	1/1½
Exeter	1/7	1/7	1/7	1/7	1/7	1/7	1/6	1/2½
Folkestone	1/4½	1/4½	1/4½	1/4½	1/4½	1/4½	1/4½	1/0½
Gloucester	1/6	1/6	1/6	1/6	1/6	1/6	1/5	1/1½
Grantham	1/6½	1/6½	1/6½	1/6½	1/6½	1/6½	1/6½	1/2
Grays	1/8½	1/8½	1/8½	1/8½	1/8½	1/8½	1/7½	1/3½
Grimsby	1/8	1/8	1/8	1/8	1/8	1/8	1/8	1/3½
Great Yarmouth	1/5½	1/5½	1/5½	1/5½	1/5½	1/5½	1/5½	1/1½
Guildford	1/5½	1/5½	1/5½	1/5½	1/5½	1/5½	1/5½	1/1½
Halifax	1/8	1/8	1/8	1/8	1/8	1/8	1/8	1/3½
Harrogate	1/8	1/8	1/8	1/8	1/8	1/8	1/8	1/3½
Hartlepools	1/8	1/8	1/8	1/8	1/8	1/8	1/8	1/3½
Hastings	1/4½	1/4½	1/4½	1/4½	1/4½	1/4½	1/4½	1/0½
Hereford	1/6	1/6	1/6	1/6	1/6	1/6	1/5	1/1½
Huddersfield	1/8	1/8	1/8	1/8	1/8	1/8	1/8	1/3½
Hull	1/8	1/8	1/8	1/8	1/8	1/8	1/8	1/3½
Ipswich	1/6	1/6	1/6	1/6	1/6	1/6	1/6	1/1½
Lancaster	1/8	1/8	1/8	1/8	1/8	1/8	1/8	1/3½
Leamington Spa	1/6½	1/6½	1/6½	1/6½	1/6½	1/6½	1/6½	1/2
Leeds	1/8	1/8	1/8	1/8	1/8	1/8	1/8	1/3½
Leicester	1/8	1/8	1/8	1/8	1/8	1/8	1/8	1/3½
Lichfield	1/6½	1/6½	1/6½	1/6½	1/6½	1/6½	1/6½	1/2
Lincoln	1/8	1/8	1/8	1/8	1/8	1/8	1/8	1/3½
Liverpool	1/9	1/9	1/8½	1/9	1/9	1/9	1/8½	1/4
Llanelly	1/8	1/8	1/8	1/8	1/8	1/8	1/8	1/3½
London (12 m. radius)	1/9½	1/9½	1/9½	1/9½	1/9½	1/9½	1/8½	1/4½
London (12-15 m. radius)	1/9	1/9	1/9	1/9	1/9	1/9	1/8	1/4
Loughborough	1/8	1/8	1/8	1/8	1/8	1/8	1/8	1/3½
Luton	1/6	1/6	1/6	1/6	1/6	1/6	1/6	1/1½
Maidstone	1/5½	1/5½	1/5½	1/5½	1/5½	1/5½	1/5½	1/3½
Manchester	1/8	1/8	1/8	1/8	1/8	1/8	1/8	1/3½
Mansfield	1/8	1/8	1/8	1/8	1/8	1/8	1/8	1/3½
Merthyr Tydfil	1/8	1/8	1/8	1/8	1/8	1/8	1/8	1/3½
Middlesbrough	1/8	1/8	1/8	1/8	1/8	1/8	1/8	1/3½
Newcastle-on-Tyne	1/8	1/8	1/8	1/8	1/8	1/8	1/8	1/3½
Newport, Mon.	1/8	1/8	1/8	1/8	1/8	1/8	1/8	1/2½
Northampton	1/7	1/7	1/7	1/7	1/7	1/7	1/7	1/1½
Norwich	1/6	1/6	1/6	1/6	1/6	1/6	1/6	1/3½
Nottingham	1/8	1/8	1/8	1/8	1/8	1/8	1/8	1/1½
Oakham	1/5½	1/5½	1/5½	1/5½	1/5½	1/5½	1/5½	1/3½
Oldham	1/8	1/8	1/8	1/8	1/8	1/8	1/8	1/1½
Oxford	1/6	1/6	1/6	1/6	1/6	1/6	1/6	1/3½
Plymouth	1/8	1/8	1/8	1/8	1/8	1/8	1/7	1/3½
Pontypridd	1/8	1/8	1/8	1/8	1/8	1/8	1/8	1/3½
Portsmouth	1/6	1/6	1/6	1/6	1/6	1/6	1/6	1/1½
Preston	1/8	1/8	1/8	1/8	1/8	1/8	1/8	1/3½
Reading	1/6	1/6	1/6	1/6	1/6	1/6	1/6	1/1½
Rochdale	1/8	1/8	1/8	1/8	1/8	1/8	1/8	1/3½
Rochester	1/5½	1/5½	1/5½	1/5½	1/5½	1/5½	1/5½	1/1½
Rugby	1/8	1/8	1/8	1/8	1/8	1/8	1/8	1/3½
St. Albans	1/6½	1/6½	1/6½	1/6½	1/6½	1/6½	1/6½	1/2
St. Helens	1/8	1/8	1/8	1/8	1/8	1/8	1/8	1/3½
Scarborough	1/7½	1/7½	1/7½	1/7½	1/7½	1/7½	1/7½	1/2½
Sheffield	1/8	1/8	1/8	1/8	1/8	1/8	1/8	1/3½
Shrewsbury	1/6½	1/6½	1/6½	1/6½	1/6½	1/6½	1/6½	1/2
Southampton	1/6	1/6	1/6	1/6	1/6	1/6	1/6	1/1½
Southend-on-Sea	1/5½	1/5½	1/5½	1/5½	1/5½	1/5½	1/5½	1/1½
Southport	1/8	1/8	1/8	1/8	1/8	1/8	1/8	1/3½
South Shields	1/8	1/8	1/8	1/8	1/8	1/8	1/8	1/3½
Stockport	1/8	1/8	1/8	1/8	1/8	1/8	1/8	1/3½
Stockton-on-Tees	1/8	1/8	1/8	1/8	1/8	1/8	1/8	1/3½
Stoke-on-Trent	1/8	1/8	1/8	1/8	1/8	1/8	1/8	1/1½
Stroud	1/5½	1/5½	1/5½	1/5½	1/5½	1/5½	1/5	1/3½
Sunderland	1/8	1/8	1/8	1/8	1/8	1/8	1/8	1/3½
Swansea	1/8	1/8	1/8	1/8	1/8	1/8	1/8	1/1½
Swindon	1/6	1/6	1/6	1/6	1/6	1/6	1/5	1/1½
Taunton	1/5½	1/5½	1/5½	1/5½	1/5½	1/5½	1/5½	1/1½
Torquay	1/7	1/7	1/7	1/7	1/7	1/7	1/7	1/2½
Tunbridge Wells	1/5	1/5½	1/5½	1/5½	1/5½	1/5½	1/5½	1/1½
Wakefield	1/8	1/8	1/8	1/8	1/8	1/8	1/8	1/3½
Walsall	1/7½	1/7½	1/7½	1/7½	1/7½	1/7½	1/7½	1/2½
Warrington	1/8	1/8	1/8	1/8	1/8	1/8	1/8	1/3½
West Bromwich	1/8	1/8	1/8	1/8	1/8	1/8	1/8	1/3½
Wigan	1/8	1/8	1/8	1/8	1/8	1/8	1/8	1/1½
Windsor	1/6	1/6	1/6	1/6	1/6	1/6	1/6	1/3½
Wolverhampton	1/8	1/8	1/8	1/8	1/8	1/8	1/8	1/2
Worcester	1/6½	1/6½	1/6½	1/6½	1/6½	1/6½	1/6½	1/3½
York	1/8	1/8	1/8	1/8	1/8	1/8	1/8	1/3½

(For rates of wages in the Building Trade in Scotland, see page 682.

CONTRACTS, COMPETITIONS, &c.

For some contracts still open, but not included in this List, see previous issues. Those with an asterisk are advertised in this number. Certain conditions beyond those given in the following information are imposed in some cases, such as that advertisers do not bind themselves to accept the lowest or any tender; that a fair wages clause shall be observed; that no allowance will be made for tenders; and that deposits are returned on receipt of a bona-fide tender unless stated to the contrary.

The date given at the commencement of each paragraph is the latest date when the tender, or the names of those willing to submit tenders, may be sent in; the name and address at the end is the person from whom or place where quantities, forms of tender, &c., may be obtained.

BUILDING, PAINTING, ELECTRIC LIGHTING, HEATING, etc.

April 19. — **Brynmawr.** — Houses. — Twenty-six houses on the housing site, Twyncynghordy, for the U.D.C. J. J. Quirk, surveyor.

April 19.—**Chelmsford.**—Houses.—Twelve houses at Woodham Ferrers, for the R.D.C. J. Dewhirst, engineer and surveyor, Waterloo-lane.

April 19.—**Dublin.**—Concreting.—Concreting and enclosing yards and playgrounds in the Boyne-street housing area, for the C.B. Geo. L. O'Connor, Mansion House Chambers, 27, Dawson-street.

April 19.—**Eastbourne.**—Houses.—Erection of 44 on the Hampden Park housing site and 66 on the Crumbles housing site, of brick or alternatively of concrete construction, for the Town Council. Borough Engineer's Office, Town Hall, Eastbourne. Deposit £2 2s.

April 19.—**Ellesmere Port and Whitby.**—Houses.—Seventy-eight semi-detached houses in Grace-road, Wilkinson-street and Westminster-road, Ellesmere Port, for the U.D.C. T. W. Francis, Clerk. Deposit £5 5s.

April 19.—**Hull.**—Houses.—Two electric houses on the Cottingham-road housing site, for the T.C. City Architect.

April 19.—**Lurgan.**—Lighting.—Electric lighting installations at St. Joseph's Convent and Chapel. P. A. Spalding, chartered engineer, Crescent, Dundalk. Deposit 10s.

April 19.—**Maesteg.**—Building.—For (*a*) bowls and tennis pavilion; (*b*) children's shelter and play-shed, for the U.D.C. J. Harpur, engineer and surveyor.

April 19.—**Menston.**—Painting.—Outside painting of several buildings at the Mental Hospital, Menston, near Leeds, for the West Riding C.C. W. E. H. Burton, architect and engineer, Mental Hospitals Board Offices Wakefield.

April 19.—**Plymouth.**—Painting.—Dwellings at Prince Rock, Sections A, B, C, and F, and Devonport, Sections D and E, and Howe and Looe-streets, Section G, for the C.B. J. Wibberley, Borough Engineer and Surveyor. Deposit £2 2s.

April 19. — **Redhill.** — Pavilion. — Construction of a new pavilion and the carrying out of alterations to the existing building at the Memorial Sports Ground, for the Reigate T.C. F. T. Clayton, Borough Surveyor, Municipal Buildings, Reigate.

April 19. — **Redhill.** — Sports and Works Buildings and Fencing.—Erection of, at the Memorial Sports Ground, for the Reigate T.C. L. P. Rees, 53, Station-road, Redhill.

April 19.—**Settle.**—Housing.—For (*a*) at Helli-field, two blocks of four houses each of the non-parlour type, (*b*) two blocks of four houses each of the non-parlour type, two pairs of a similar type, and one pair of the parlour type; (*c*) at Settle, five pairs of the non-parlour type, (*d*) five pairs of the parlour type; (*e*) at Bentham, three pairs of the non-parlour type, and (*f*) ditto, for the R.D.C. T. A. Foxcroft, Surveyor.

April 19. — **West Ham.** — Buildings. — Eight blocks of buildings at Manor-road, Canning Town, comprising 152 self-contained flats, in sections, as follows: Section A, blocks Nos. 1 and 2 (32 flats); Section B, blocks Nos. 3, 4 and 5 (56 flats); Section C, blocks Nos. 6, 7 and 8 (64 flats), for the County Borough Council. Borough Engineer, Town Hall, West Ham, E. 15. Deposit £2.

April 19.—**Widnes.**—School.—Erection of a new school, for the Borough of Widnes Education Committee. F. E. and C. H. Barlow, architects, Ditton-road Chambers, Widnes. Deposit £3 3s.

April 20.—**Belfast.**—Painting.—Painting and decoration of the Lord Mayor's rooms, City Hall, for the C.B. City Surveyor.

April 20. — **Bristol.** — School. — Builder's and plumber's work connected with the erection of a Council school for infants at Shirehampton, for the T.C. A. E. Oaten, architect, Phœnix Chambers, 22, Clare-street, Bristol. Deposit £2 2s.

April 20.—**Carlton.**—Houses.—Twenty living room type houses on the Conway-road site, for the U.D.C. J. A. West, A.R.I.B.A., surveyor, Manor-road. Deposit £1 1s.

April 20.—**Carrickmore.**—Repairs.—Alteration and repair at the Courthouse, Carrickmore, Co. Tyrone, for the Government of Northern Ireland. W. R. Maconkey, Assistant Secretary, Ministry of Finance, 15, Donegall-square West.

April 20.—**Coventry.**—Extension.—Extensions to Gulson Library, for the T.C. E. H. Ford, City Engineer and Surveyor. Deposit £2 2s.

April 20.—**Dundee.**—School.—New Central advanced school at Blackness-road, for the E.C. Maclaren, Soutar & Salmond, F.R.I.B.A., 16, South Tay-street. Deposit £2 2s.

April 20.—**Glasgow.**—Trades.—For (1) plumber and gasfitter work repairs; (2) plaster work repairs; and (3) grates, &c., repairs, for the T.C. J. Lindsay, Town Clerk.

April 20.—**Goole.**—Houses.—Twelve non-parlour type houses at Swinefleet, for the R.D.C. R. Plewes, surveyor. Deposit £1 1s.

April 20.—**Leeds.**—Houses.—Twenty-six type "B" houses on the Crossgates housing estate, for the T.C. W. T. Lancashire, City Engineer.

April 20. — **Nottingham.** — Painting. — Painting, washing, whitewashing, &c., at the General Hospital, for the Committee. P. M. MacColl, House Governor and Secretary.

April 20.—**Plymouth.**—Alterations.—To refreshment room, Devonport Park, for the C.B. J. Wibberley, Borough Engineer and Surveyor.

April 20.—**Sheffield.**—Building.—For (*a*) transformer sub-station in Orphanage-road, Pitsmoor, and (*b*) additions to transformer sub-station, near Bawtry-road, Tinsley, for the T.C. S. E. Fedden, Commercial-street. Deposit 10s. 6d. each.

April 20.—**Sunderland.**—Works.—Construction of a dry area at the Maternity Home (house No. 4), for the C.B. Borough Engineer. Deposit £1 1s.

April 20.—**Watford.**—Tea Pavilion and Public Convenience.—To be erected for the Borough of Watford in Cassiobury Park. W. W. Newman, Borough Engineer, Municipal Offices, 14, High-street, Watford. Deposit 2 guineas, to the Borough Treasurer.

April 21.—**Bicester.**—Houses.—Three pairs of working class houses on the Buckingham-road site, for the U.D.C. Surveyor, 4, Launton-road.

April 21.—**Godalming.**—Cottages.—Four blocks of four cottages at Station-road, Farncombe; one block of four cottages at Borough-road, Godalming; and one pair of cottages at Unstead, for the T.C. G. B. Hart-free, Borough Surveyor. Deposit £2 2s.

April 21.—**Liverpool.**—Retiling.—Stripping and retiling roofs of buildings at Highfield Sanatorium, for the T.C. Land Steward and Surveyor.

April 21.—**London.**—Cleaning, Painting and Repairs.—(1) North-Eastern Fever Hospital, St. Ann's-road, Tottenham, N. 15; (2) North-Western Ambulance Station, Lawn-road, Hampstead, N.W. 3, for the Metropolitan Asylums Board. Office of the Board, Victoria Embankment, E.C. 4. Deposit £1 in respect of each work.

April 21.—**London.**—Refuse Destructor.—Installation of, with incidental building work, at the North-Western Fever Hospital, Lawn-road, Hampstead, N.W. 3, for the Metropolitan Asylums Board. Office of the Board, Victoria Embankment, E.C. 4. Deposit £1.

* April 21. — **London.**—Cleaning and Painting.—At the South-Western Hospital, Landor-road, Stockwell, S.W.9, for the Metropolitan Asylums Board. Office of the Board, Embankment, E.C.4. Deposit £1.

April 21.—**Manchester.**—Pipes.—Covering hot-water pipes and steam pipes at the Crumpsall Institution, Crumpsall, for the B.G. E. Hargreaves, Superintendent of Works.

April 21.—**Orrell.**—Houses.—Sixteen houses in Park-road, for the U.D.C. P. Pigot, clerk. Deposit £1 1s.

April 21.—**Prestwich.**—Building.—Construction of a paddling pool and sandpit and surfacing of a recreation ground in Prestwich Clough, for the U.D.C. Surveyor.

April 21.—**Surrey and London.**—Building and Sanitary Work.—(1) Belmont Laboratories, Sutton, Surrey, new guinea-pig house; (2) Lambeth Casual Ward, Wincott-street, S.E. 11, additional sanitary accommodation, for the Metropolitan Asylums Board. Office of the Board, Victoria Embankment, E.C. 4. Deposit £1 1s. in respect of each work.

April 21.—**Swansea.**—Houses.—Erection of a further 120 houses at Morriston, for the County Borough Council. Ernest E. Morgan, A.R.I.B.A., Borough Architect, 3, Prospect-place, Swansea. Deposit 3 guineas.

April 21.—**Wakefield.**—Residences.—Pair of semi-detached residences at the Wakefield Mental Hospital, for the West Riding C.C. W. E. H. Burton, architect and engineer, Mental Hospitals Board Offices. Deposit £1.

April 21.—**Whitley and Monkseaton.**—Houses.—Fifty houses at Hill Heads, for the U.D.C. A. J. Rousell, Surveyor. Deposit £1 1s.

April 22. — **Crewe.** — Houses.—Erection of 100, in two groups of 50 houses, for the Municipal Housing Committee. E. G. Timbrell, F.I.A.A., &c., Architect to the Committee, Municipal Buildings, Crewe. Deposit £2 2s.

April 22.—**Huntly.**—Hall.—Parish church hall at Huntly. A. Marshall Mackenzie & Son, architects, 173A, Union-street, Aberdeen.

April 22.—**London.**—Decorations.—Carrying out of interior decorations to certain houses and flats on the Redan and St. Louis housing estates, and for repairs to roof and readering of flank walls of Nos. 234 and 236, Knight's-hill, for the Lambeth Borough Council. Osmond Cattlin, M.Inst.C.E., Borough Engineer, Lambeth Town Hall, Brixton-hill, S.W.2, on receipt of a stamped addressed envelope.

April 22.—**London.**—Painting.—Cleaning and re-painting station buildings, cranes, &c., at the following places:—Swansea Docks, Bassaleg Junction, Risca, &c., Portskewett, Severn Tunnel Junction, &c., Bridgend, Porthcawl, &c., Morebath, Barnstaple, &c., Durston, Kingswear, &c., Bridport, Dorchester, &c., Wheatley, Watlington, &c., Taplow, Henley, &c., Victoria and Albert Docks, Smithfield, &c., Ealing Broadway, Southall, &c., Worcester (Foregate-street), Great Malvern, &c., Cheltenham Spa (St. James), &c., Winchcombe, Bishops Cleeve, &c., Shrivenham, Westbury, &c., Bath, Bristol, &c., Bedminster, Weston-super-Mare, &c., for the G.W.R. F. R. E. Davis, secretary, Paddington Station, London, W.2.

April 22.—**New Sarum.**—Houses.—Thirty-two houses of the non-parlour type on the north-east side of Devizes-road, for the T.C.—W. J. Goodwin, A.M.Inst.C.E., Chartered Civil Engineer, City Engineer and Surveyor, Municipal Offices, Salisbury. Deposit £2 2s.

April 22.—**Westhampnett.**—Houses.—Forty houses proposed to be built on the Council's sites situated in Beach-road, Selsey, for the R.D.C. W. D. Rasell, Clerk, Pallant House, Chichester.

April 23.—**Cawnpore (India).**—Building.—Construction of the Technological Institute (main building), for the Public Works Department, United Provinces. H. J. Amoore, Executive Engineer, Cawnpore Provincial Division.

April 23.—**Chelmsford.**—Conveniences.—Three conveniences in the Town Council's Recreation Grounds, for the T.C. E. J. Miles, Borough Engineer, Rainsford House

April 23.—**Edinburgh.**—Wall.—Boundary wall at Liberton site, for the E.C. John Stewart, Executive Officer, Education Offices.

April 23.—**Hull.**—Baths.—Construction of vapour and electrical baths in Epworth-street and adjoining the present Beverley-road baths, for the T.C. F. W. Bricknell, City Engineer.

April 23.—**Oldbury.**—Houses.—Thirty-two houses at Newbury-lane, and for the erection of 32 houses (brick built), fronting to Queen's-road and Bason's-lane, for the U.D.C. W. Greenwood, M.I.M. & C.E., engineer and surveyor. Deposit £2 2s.

April 24.—**Ashford.**—Painting.—Cleaning and painting of the "Harper Fountain," Victoria Park, for the U.D.C. Wm. Terrill, surveyor, 5, North-street.

April 24.—**Blackpool.**—Building.—Erection of the Dr. Cocker Memorial Tower in the new Park, for the C.B. Professor Lionel B. Budden, M.A., A.R.I.B.A., Liberty Buildings, School-lane, Liverpool. Deposit £2 2s.

April 24.—**Clevedon.**—Houses.—Eighteen houses on Griffin-road estate, for the U.D.C. G. W. Knowles, surveyor, Verwood, Madeira-road.

* April 24.—**Kent.**—Houses.—Erection of 400 near Snowdown Colliery, Eastry. Abercrombie, Archibald & Martindale, associated architects, 53, Strand-street, Sandwich, Kent. Deposit £2 2s.

* April 24.—**Tredegar, Monmouth.**—Houses.—Erection of 50 houses at Ashvale, Tredegar, in various blocks, parlour and non-parlour type, for the U.D.C. W. Lloyd Roach, A.M.I.C.E., Architect to the Council, Council Offices, Tredegar. Deposit £2, in Treasury notes.

* April 24.—**Tredegar, Monmouth.**—Bungalow.—Erection of, at the Council's Waterworks at Nantybwch, near Tredegar, for the U.D.C. D. Walter Davies, Gas and Water Manager, Gas and Water Offices, Tredegar. Deposit £1 10s., in Treasury notes.

April 26.—**Cumberland.** — Alterations. — Alterations and new drainage schemes at (*a*) Corby Hill police station and house adjoining; and (*b*) Longtown police station, for the C.C. J. Forster, F.R.I.B.A., County Architect, The Courts, Carlisle.

April 26.—**Great Ouseburn.**—Cottages.—Four cottages at Green Hammerton, on the York and Boroughbridge main road, for the R.D.C. H. S. Thompson, Clerk, Council Offices, Boroughbridge.

April 26. — **London.** — Fire Station Buildings. — Erection of a fire station with flats over, stores, &c., at Friern-lane, Friern Barnet, for the U.D.C. F. P. Kindell, A.M.Inst.C.E., Engineer and Surveyor to the Council, Council Offices, The Priory, N. 11. Deposit £2.

April 26. — **London.** — Repairs. — External renovations, repairs to roofs, and other sundry work at the Administrative Offices, &c., 61, Bartholomew-close, E.C. 1, for the Guardians of the Poor of the City of London Union. Pridmore & Groom, Architects to the Guardians, 3, Broad-street Buildings, E.C. 2.

April 26. — **Newcastle-upon-Tyne.** —Houses.—Execution of the following brick houses on the Walker estate: (1) Walker estate No. 1 scheme, 230 houses; (2) Walker estate No. 2 scheme, 36 houses; (3) Wharrier-street, 26 houses, for the Housing Committee of the Corporation. Housing Architect, 18, Cloth Market. Deposit, 3 guineas in respect of No. 1, 2 guineas in respect of Nos. 2 and 3, to the City Treasurer.

April 26.—**Rackenford.**—Lake.—Construction of an artificial lake and two tennis courts at Rackenford Manor. J. Siddalls, civil engineer, Drumore, Tiverton, Devon. Deposit £1 1s.

April 26.—**Solihull.**—Houses.—Twelve houses, Hermitage site, and eight houses, Bentley Heath-road, for the R.D.C. C. H. Cook, clerk. Deposit £1 1s.

April 26.—**Wakefield.**—Stores.—New central stores, Cliff-lane, for the West Riding C.C. West Riding Architect, County Hall, Wakefield.

April 26.—**Wallasey.**—Houses.—Thirty-eight semi-detached houses on the Belvidere-road site, for the C.B. Borough Engineer and Surveyor. Deposit £1 1s.

* April 27.—**Bromley, Kent.**—Houses.—Eighty-four Class "A" type to be erected for Bromley R.D.C. Leonard O. Wall, Clerk to the Council, Bromley R.D.C., Park House, Beckenham-lane, Bromley, Kent. Deposit £2.

April 27.—**Dublin.**—Centre.—Model child welfare centre, for the C.B. McDonald & Dixon, architects, 20, Ely-place. Deposit £5 5s.

April 27.—**Durham.**—School.—Erection of the Eppleton Colliery new Council school, for the Durham C.C. Mr. F. Willey, F.R.I.B.A., 34, Old Elvet, Durham.

April 27.—**Isle of Wight.**—Houses.—Three pairs of houses at Gunville, for the R.D.C. R. Joliffe, architect, 6, Shooters Hill, Cowes. Deposit £2 2s.

April 27.—**Maldon.**—Houses.—Twelve houses in pairs in Queensborough-road, Southminster; four houses in pairs near Compasses Inn, Great Totham; eight houses in pairs in Tollesbury-road, Goldhanger, for the R.D.C. W. Almond, Surveyor, 6, Market-hill.

* April 27.—**Orpington, Kent.**—Council Offices.—Erection for the Bromley R.D.C. Mr. Danby Smith, F.R.I.B.A., Parliament Mansions, Victoria-street, Westminster, S.W.1. Deposit £5 in Treasury Notes.

APRIL 27.—**Tamworth.**—HOUSES.—For (*a*) 40 non-parlour type houses, in pairs; and (*b*) about 250 yds. of roadway, consisting of tar-macadam carriageway and paths, grass verges, kerbing, &c., and 1,000 ft. of 9in. and 6 in. stoneware sewers, together with manholes, gulleys, &c., on the Wiggington-road, for the B.C. A. O. Marshall, Borough Engineer and Surveyor.

APRIL 27.—**Thornley.**—EXTENSION.—Alterations, extensions and improvements to the existing school premises, for the Durham C.C. F. Willey, F.R.I.B.A., 34, Old Elvet, Durham.

✱APRIL 28.—**Chiswick.**—CONVERSION WORK.—Conversion of an existing brick barn at the Riverside Recreation Ground into a two story sports pavilion, together with apartments for groundsmen. Edward Willis, F.S.I., M.Inst.C.E., Engineer and Surveyor, Chiswick, W.4.

APRIL 28.—**Lenham.**—WALL.—Brick wall, about 170 yds. long, at Lenham Cemetery, for the P.C. A. C. Joy, clerk, Forge House.

✱APRIL 28.—**London.**—BILLIARD HALL.—Erection of, at Chiswick, W.4. Hearn & Chuter, architects, Town Hall Buildings, Chiswick, W.4. Deposit £3.

APRIL 28. — **London.** — MATERNITY AND CHILD WELFARE CLINIC.—Erection of, in Wellington-road, Bow, for the Metropolitan Borough Council of Poplar. Harley Heckford, M.Inst.C.E., Borough Surveyor, Council Offices, Poplar. Deposit £3 3s.

✱APRIL 30. — **Coventry.** — VARIOUS. — Erection of kitchens, bedrooms, woodworkshop, and conversion of existing rooms into class rooms, &c., at Bablatic School. Mr. Herbert W. Chattaway, architect, Trinity Churchyard, Coventry. Deposit £2 2s.

APRIL 30.—**Durham.**—PAINTING.—Internal painting of Dinsdale Park residential school, near Darlington, for the C.C. A. J. Dawson, Director of Education, Shire Hall, Durham.

APRIL 30.— **Southampton.**—SCHOOL ENLARGEMENT, &c.—Enlargement of Bordon Council School, including the erection of two new classrooms, cloak room, staff room, and manual instruction and cookery room, for the County Borough Council. A. L. Roberts, County Architect, The Castle, Winchester. Deposit 1 guinea, by cheque, payable to the Hants County Council and crossed "Lloyds Bank, Ltd., Capital & Counties Branch, Winchester."

APRIL 30.—**Upholland.**—HOUSING.—Two blocks of four houses on the Newgate housing site, for the U.D.C. H. Hunt, clerk. Deposit £1 1s.

MAY 1.—**Tewkesbury.**—HOUSES.—Twelve houses at the Priors Park site, for the T.C. W. Ridler, Borough Surveyor, Station-street. Deposit £2 2s.

✱MAY 3.—**Durham.**—SCHOOL.—Erection of Easington-lane new Council school, partly of composite construction, consisting of framed superstructure and partly of brickwork, for the County of Durham Education Committee. F. Willey, F.R.I.B.A., 34, Old Elvet, Durham.

✱MAY 3.—**Guernsey.**—HOUSES.—Erection of 10 houses in La Rue des Monts, Delancey Hill, St. Sampson's, for the States Committee for Homes for Workers of the States of Guernsey. J. A. F. Ozanne, President, States Office, Guernsey. Deposit £2 2s.

✱MAY 3.—**Kent.**—HOUSES.—Erection of 60 on the Shortlands housing estate, for the U.D.C. Surveyors' Department, Council Offices, Bromley-road, Beckenham. Deposit £2.

MAY 3.— **Sunbury-on-Thames.**— HOUSES.— Thirty-two houses in Cavendish-road, near Vicarage-road, Sunbury Common, for the U.D.C. H. F. Coales, surveyor. Deposit £2 2s.

✱MAY 4.—**Rainham, Kent.**—TELEPHONE EXCHANGE.—Erection of, at Rainham, Kent, for the Commissioners of His Majesty's Office of Works. Contracts Branch, King Charles-street, London, S.W.1. Deposit 1 guinea. (Cheques payable to the Commissioners.)

MAY 4.—**Watford.**—COTTAGES.—Eight cottages near Trowley Bottom, and eight at Primrose-terrace, near King's Langley, for the R.D.C. F. Wilson, Market-place, Watford.

MAY 5.—**East Stow.**—HOUSES.—For (*a*) 12 houses at Combs; and (*b*) six houses at Creeting St. Peter, for the R.D.C. Hunt & Coates, architects, 51A, Abbeygate-street, Bury St. Edmunds.

✱MAY 5.—**Stourbridge.**—TELEPHONE EXCHANGE.—Erection of, at Stourbridge, for the Commissioners of His Majesty's Office of Works. Contracts Branch, King Charles-street, London, S.W.1. Deposit, 1 guinea. (Cheques payable to the Commissioners.)

✱MAY 6. — **Middlesbrough.** — EMPLOYMENT EXCHANGE.—Erection of, at Normanby-road, Southbank, Middlesbrough, for the Commissioners of His Majesty's Office of Works. Contracts Branch, King Charles-street, London, S.W.1. Deposit 1 guinea. (Cheques payable to the Commissioners.)

✱MAY 7.—**Crawley, Sussex.**—POST OFFICE AND TELEPHONE EXCHANGE.—Erection of, at Crawley, Sussex, for the Commissioners of His Majesty's Office of Works. Contracts Branch, King Charles-street, London, S.W.1. Deposit 1 guinea. (Cheques payable to the Commissioners.)

✱MAY 8.—**Hayes, Middlesex.**—HOUSES.—Erection of 100 at Hayes, for the U.D.C. Town Hall, Hayes. Deposit £5 5s.

MAY 10.—**Greenwich.** — CONCRETE JETTY.—Construction of a reinforced concrete jetty at the Tunnel Avenue Depot, East Greenwich, for the Metropolitan Borough Council. Borough Engineer and Surveyor, Town Hall, Greenwich, S.E.10, between the hours of 10 and 4 p.m., Saturdays (10 and 12 noon). Deposit £5 5s.

✱MAY 10.—**Newmarket.**—HOUSES.—Erection of houses in pairs, for the U.D.C. W. H. Eley, Assoc.M. Inst.C.E., Godolphin House, Newmarket.

NO DATE.—**Fortrose.**—HOUSE.—House to be erected in Fortrose. T. Munro, architect, 62, Academy-street, Inverness.

✱NO DATE.—**Uxbridge.**—COTTAGES.—Erection of 44 cottages at Cowley and eight at Northolt, for the R.D.C. Frederick Hall-Jones, F.R.I.B.A., 11, Haven Green, Ealing, W.5. Deposit £2 2s.

MATERIALS, etc.

APRIL 19.—**Great Yarmouth.**—MATERIALS.—Guernsey granite chippings, for the C.B. S. P. Thompson Borough Engineer.

APRIL 19.—**Witham.**—MATERIALS.—For (1) good granite, uniformly broken to pass from 1½ in. to 2 in. gauges. W. P. Perkins, surveyor.

APRIL 21.—**Margate.**—MATERIALS.—30,000 gall. of dehydrated tar, 1,000 tons of 2 in. broken granite, 200 tons of 2 in. untarred Kent ragstone, 500 tons of 2 in. tarred Kent ragstone, 600 tons of 1½ in. tarred Kent ragstone, 400 tons of ½ in. tarred Kent ragstone, 2,000 ft. concrete kerbing, 1,000 sq. yd. stone paving, for the T.C. Borough Surveyor, 13, Grosvenor-place.

APRIL 21.—**Romford.**—MATERIALS.—Surface dressing with Spramex, approximately 67,000 square yards of main and district roads, for the U.D.C. F. G. Beaumont, Engineer and Surveyor, 8A, South-street.

✱APRIL 22.—**Belfast.**—LIFTS.—Supply of lifts for the new Museum and Art Gallery in Botanic Gardens Park, for the County Borough Council. Town Clerk's Office, City Hall.

APRIL 22.—**Leyburn.**—MATERIALS.—Winning, breaking, leading and laying on approximately 1,000 cubic yds. of 2½ in. roadstone, for the R.D.C. P. Utley, Highway Surveyor.

APRIL 22.—**London.**—GIRDERS.—257 tons of steel girders and other iron and steel work, for the G.W.R. F. R. E. Davis, Secretary, Paddington Station, London. Deposit £2 2s.

APRIL 24. — **Faversham.** — MATERIALS. — 400 tons (more or less) of 2 in. gauge granite, 200 tons (more or less) of clean chippings, 1,200 tons (more or less) of bituminous slag, granite, or other similar material, 400 tons (more or less) of crushed grit, for the T.C. S. P. Andrews, Borough Surveyor, 20, West-street.

APRIL 24.—**King's Lynn.**—MATERIALS.—Tarred slag, for the T.C. J. C. Matthew, Borough Engineer.

APRIL 26.—**India.**—MATERIALS.—Steel bridgework, for the Director-General, India Store Department, Branch No. 16, Belvedere-road, Lambeth, S.E.1

APRIL 26.—**Prestwich.**—MATERIALS.—Cubical limestone chippings, granite setts, granite chippings, dressed edging kerb, lonkey setts, cement concrete flags, British Portland cement, tarred slag, tarred limestone, sand, for the U.D.C. M. A. Piercy, surveyor.

APRIL 27.—**Leeds.**—FENCING.—520 lin. yds. of wrought iron fencing, 5 ft. 6 in. high, for the T.C. W. T. Lancashire, City Engineer.

APRIL 28.—**Glasgow.**—MATERIALS.—Plumbers' furnishings, paints and varnish, joiner work, &c., for the T.C. R. B. Thomson, General Manager, Baths Department, 38, College-street.

MAY 3.—**Karachi Port.**—CEMENT.—For 8,750 tons Portland cement, for the Trust. Rendel, Palmer & Tritton, 12–14, Dartmouth-street, Westminster, S.W.1.

ENGINEERING, IRON AND STEEL.

APRIL 19.—**Holland.**—BRIDGE.—For (1) construction of the foundations, abutments, retaining walls and floors in ferro-concrete, and for timber fendering, &c., preparatory to the erection of a steel lift bridge to carry the new by-pass road over the tidal River Welland, in the urban area of Spalding, and connecting the Spalding–Holbeach and the Spalding–Boston main roads; and (2) new road approximately 900 yds. in length in concrete, together with all necessary excavating, filling-up, draining, kerbing, fencing, &c. The construction of four small culverts in concrete is also included in the work, for the C.C. Wm. A. Rogerson, County Surveyor, Guildhall, Boston, Lincs. Deposit £5 5s.

APRIL 20.—**Port Ellen.**—ALTERATIONS.—Altering and improving the existing tanks supplying the Port Ellen Water District, the construction of a sand filter, and the supply of all necessary cast-iron pipes, &c., for the Argyll C.C. W. R. Copland & Sons, C.E., 146, West Regent-street, Glasgow. Deposit £1 1s.

APRIL 21.—**Burgess Hill.**—TANKS.—Construction of sedimentation tanks to hold about 80,000 gall., percolating filters, small pumping station and sump, and other works on the existing disposal site near Burgess Hill, for the U.D.C. Bruges & Swayne, engineers, 1, Victoria-street, Westminster, S.W.1. Deposit £3 3s.

APRIL 22.—**Leyburn.**—BRIDGE.—Reinforced concrete road bridge at Castle Bolton Ghyll, for the R.D.C. P. Utley, Highway Surveyor.

APRIL 24.—**Kirkharle.**—RECONSTRUCTION.—Of Kirkharle Bridge, on the Newcastle and Otterburn-road, for the Northumberland C.C. J. A. Bean, County Surveyor, Moothall, Newcastle-on-Tyne.

APRIL 26.—**Guildford.**—BRIDGE.—Construction of a ferro-concrete bridge on the Hennebique system over the River Wey at Newark-lane, for the R.D.C. J. Anstee, engineer and surveyor, Commercial-road. Deposit £2 2s.

ROAD, SEWERAGE, AND WATER WORKS.

APRIL 19.—**Clitheroe.**—WATERWORKS.—For (1) the excavation for carting and laying of about 6,042 lin. yd. of 6 in. cast-iron pipes, with valves and other fittings, and the construction of filters, meter chamber, and other works; (2) supply of about 6,042 lin. yd. of 6 in. cast-iron pipes, together with special castings; (3) supply of valves, hydrants, &c., for the R.D.C. H. A. Johnson, engineer, 14, The Exchange, Bradford. Deposit £2 2s. each.

APRIL 19.—**Perth.**—PIPES.—9 in. stoneware pipe and 6 in. and 4 in. cast-iron pipes, together with valves and other appurtenant works, for the C.C. J. D. Smith, Engineer, Engineer and Surveyor's Office, Aberfeldy.

APRIL 19.—**Romford.**—SEWERS.—Sewers in Hardley Green-road, Brentwood-road and Cranham-road, Hornchurch, comprising about 1,225 yards of 9 in. stoneware pipe sewer, with 14 manholes and other incidental works, for the R.D.C. W. J. Grant, Surveyor, 16A, South-street.

APRIL 20. — **Barrow-upon-Soar.** — SEWERS. — Construction of about 850 yds. of 9 in. and 7 in. stoneware pipe sewers, together with manholes and other works, in Black-lane and adjacent land and streets in the parish of Birstall, for the R.D.C. Pick, Everard, Keay & Gimson, engineers, 6, Millstone-lane, Leicester. Deposit £1 1s.

APRIL 20.—**Buenos Aires.**—PIPES.—Stoneware pipes required for the sanitary works of Rio Cuarto and San Nicolas, for the Oberas Sanitarias de la Nacion. Dept. of Overseas Trade, 35, Old Queen-street, S.W.1.

APRIL 20.—**London.**—PAVING.—Paving and forming the roadway and footways of Heather-road, Lee, for the Lewisham B.C. J. W. Shuter, Town Clerk, Town Hall, Catford, S.E.6.

APRIL 20.—**Tottenham.**—MAKING-UP.—For (*a*) passageway rear of Gourley-street; (*b*) passageway 568–570, High-road, for the U.D.C. Engineer. Charge 10s. 6d.

APRIL 21.—**Chiswick.**—MAKING-UP.—Of Haywood-terrace, for the U.D.C. E. Willis, Surveyor, Town Hall, Chiswick, W.4.

APRIL 21. — **Fleetwood.** — SEWERING. — Sewering, pitching, kerbing, and part making-up of West-drive, Cleveleys, for the Estate, Ltd. Broughton, Atkinson, Eagle & Sons, surveyors, 37, Brown-street, Manchester, or F. S. Clarkson, surveyor, Estate Office, Fleetwood. Deposit £1 1s.

APRIL 21.—**Luton.**—ROAD.—Construction of new road about 60 yds. long, with storm water sewer, off the Hitchin road at Turner's Knoll, for the T.C. J. W. Tomlinson, Borough Engineer and Surveyor, 18, Upper George-street.

APRIL 21.—**Rugby.**—SEWER.—Laying about 360 yards of 12 in. cast-iron sewer, with manholes, at Hillmorton, near Rugby, for the Rugby Benefit Building Society. W. T Fisher, secretary, 53, Clifton-road. Deposit £1 1s.

APRIL 21.—**Southport.**—PAVING.—Levelling, paving, metalling and making good Kirkstall-road and Kirklees-road, Birkdale, for the C.B. A. E. Jackson, Borough Engineer. Deposit £4 4s.

APRIL 22.— **Barnard Castle.** — IMPROVING. — New foundations, levelling, improving gradients, and resurfacing with dry and tarred old Cleveland slag, 2,050 and 4,430 super yds. respectively to open spaces "Galgate," and portion of first-class district road, for the U.D.C. H. E. Raine, surveyor. Deposit £2 2s.

APRIL 22.—**Bathgate.**—PIPES.—Cutting tracks and laying and jointing about 2½ miles of 12 in. cast-iron pipes from Pates Hill tank to Breich Cross-roads, for the D.C. J. & A. Leslie & Reid, C.E., 72A, George-street, Edinburgh. Deposit £1.

APRIL 22.—**Bury.**—RAILINGS.—Removal of certain existing fencing and the provision of new iron railings, together with foundations, &c., in connection with the extension of the Barlow recreation ground at Blackford Bridge, for the C.B. Borough Engineer, Bank-street. Deposit 10s. 6d.

APRIL 23.—**Rhins.**—PIPES.—Laying and jointing about 270 yards of 5 in. cast-iron pipes, 3,000 yards of 4 in. cast-iron pipes, and 380 yards of 3 in. cast-iron pipes, for Glenluce water supply, and constructing tank and filters with relative works, about 1½ miles from Glenluce, for the Wigtown C.C. A. Merrilees, County Sanitary Inspector, Public Health Office, Newton-Stewart. Deposit £1.

APRIL 23.—**Ross and Cromarty.**—RECONSTRUCTION.—Widening, strengthening, resurfacing, drainage, fencing, retaining walls and bridges in sections between Tomich, Beauly, and Alness, and between Edderton Mains, and Bonar Bridge, approximate 16.3 miles, for the C.C. Surveyor to the Mid-Ross District Committee, Dingwall. Deposit £3 3s.

APRIL 23.—**Ulverston.**—SEWERS.—Carrying out of a sewerage scheme at Lindale, near Grange-over-Sands, including sewers, manholes and outfall works, for the R.D.C. Engineer, 24, Queen-street.

APRIL 23.—**Wharfedale.**—MAINS.—Haulage, excavation, laying and jointing about 800 lin. yds. of a 6 in. diameter, and 1,450 lin. yds. of 5 in. diameter water mains, and other works incidental thereto at Menston, for the R.D.C. H. Riding, Waterworks Engineer.

APRIL 24.—**Lytham Saint Anne's.**—SEWER.—Construction of approximately 2,380 yds. of 9 in., 12 in., 18 in., 30 in., 42 in. and 48 in. diameter concrete main sewer, together with manholes, ventilating shafts, and other appurtenant works, for the T.C. G. W. Lawson, Borough Engineer and Surveyor. Deposit £5.

APRIL 24.—**Sutherland.**—REPAIRS.—Repair and maintenance of roads: Bonar-Lairg-Tongue-road, 47 miles 1,496 yards; Inversbin-Lochinver-road, 44 miles 1,320 yards, and Scourie-road, from Terry Junction to Laxford, 34 miles 616 yards, for the C.C. County Road Surveyor, Golspie.

APRIL 26.—**Basford.**—MAIN.—Providing and laying about 330 yds. of 3 in. cast iron pipe water main, with the necessary special castings and valves, &c., at Langton Hollow, for the R.D.C. S. Maylan, Engineer and Surveyor. Deposit £1 1s.

APRIL 26.—**Glasgow.**—SEWERS.—Construction of two 12 in. pipe sewers on the north and south sides of Great Western-road, respectively, from Byres-road to Hyndland-road, for the T.C. J. Lindsay, Town Clerk.

APRIL 26.—**Liverpool.**—PIPELAYING.—Laying of steel pipes of 42 in. internal diameter, and other ancillary works, as follows:—From Hirnant to Wern-ddu, in the County of Montgomery, and from Lloran-Ganol to Bodlith, in the County of Denbigh, for a distance of about 4½ miles, for the T.C. Water Engineer, Alexandra Buildings, 55, Dale-street. Deposit £5 5s.

APRIL 27.—**Ashington.**—MAKING-UP.—Of Harmonic-avenue and Back Duke-street West, Ashington, for the U.D.C. G. Beaty, Surveyor and Engineer.

APRIL 27.—**Batley.**—PIPES.—Laying and jointing of a pipe line between the Brownhill Reservoir, for the T.C. G. H. Hill & Sons (Manchester), Civil Engineers, 40, Kennedy-street, Manchester. Deposit £3 3s.

APRIL 27.—**Epsom.**—MAKING-UP.—Laying concrete roads for the making-up of Stoneleigh-drive and Kingsmead-avenue, Worcester Park, Cuddington, for the R.D.C. T. E. Ware, Surveyor, Waterloo-road.

✱APRIL 28.—**Highgate.**—ROAD WORKS.—Sewering, levelling, paving, metalling, kerbing, channelling, and making good of the following roads: Cholmeley-crescent (second section), about 652 ft. lineal (including part formerly known as Causton-road); Coolhurst-avenue (second section), about 767 ft. lineal, for the Town Council. E. J. Lovegrove, Borough Engineer and Surveyor, Town Hall, Highgate.

MAY 5.—**Hove.**—MAKING-UP.—Making-up roadway, laying new paving, kerbing and channelling, and other works in Leicester Villas, for the T.C. Borough Surveyor.

NO DATE.—**Down.**—RECONSTRUCTION.—Of the Lisburn to Hillsborough-road between Lisburn U.D.C. boundary and Ballynahinch-street in Hillsborough, in the townlands of Magherageery, Carnbane, Culcavy, Carnreagh, Hillsborough and Small Park, for the C.C. J. G. Wilkin, County Surveyor, Courthouse, Downpatrick.

NO DATE.—**Tendring.**—SEWERS.—For (*a*) Mistley, 66 yds., 9 in. pipe, and (*b*) Lawford, 66 yds., 9 in. pipe, for the R.D.C. J. E. Hall, Sanitary Inspector, Weeley.

Competitions.

(*See Competition News page* 626.)

Auction Sales, Tenders, etc.

APRIL 20.—**London.**—Fuller, Horsey & Co. will sell in lots, by order of Perry & Co. (Bow), Ltd., clearance sale owing to expiration of lease, at the Tredegar Works, Bow, E., builders' and contractors' plant and material. Auctioneers, 11, Billiter-square, E.C.3.

✱APRIL 20.—**London.**—Joseph Hibbard & Sons will sell third portion, without reserve, by order of Messrs. Allnutt, Ltd., Chase Estate, Park Royal, N.W.10, upon the premises, Depot 2,703, Willesden-lane (10 minutes from N. Acton Station, C.L. Railway), stock of S.H. timber and stores, firewood, Windsor chairs, scrap lead, gas boilers, electrical stores, joinery, &c. Auctioneers, 15, Newington Green, Islington, N.16.

✱APRIL 20.—**London.**—Veryard & Yates will sell, without reserve, at 255, Clapham-road, S.W., timber, fittings, and building materials. Auctioneers, 365, Norwood-road, S.E.27.

APRIL 20.—**Stamford.**—Perry & Phillips will sell the whole of the interior and exterior fixtures and fittings, previous to the demolition of Ketton Hall. After the sale, the fabric of the mansion will be sold, for demolition. Also desirable building plots will be offered for sale. Auctioneers, Bridgnorth.

✱APRIL 21.—**London.**—Veryard & Yates will sell, by order of Mr. G. Wiggins, owing to expiration of lease, at 141 to 147, Mile End-road, E.1 (close Stepney Green tube station), useful building materials. Auctioneers, 365, Norwood-road, S.E.27.

✱APRIL 21 & 22.—**Sevenoaks.**—Cronk (in conjunction with Lofts & Warner) have received instructions from the Right Hon. Earl Amhurst to sell, on the estate, "Montreal," Sevenoaks, building materials and stock of the stables, gardens, and estate yard, hardware stores, gamekeepers' appliances, &c. Auctioneers, Sevenoaks, and 16, King-street, St. James's, S.W.1.

✱APRIL 22.—**London.**—Goddard & Smith will sell, in the Estate Auction Hall, 22, King-street, St. James's, S.W.1, freehold building land, Alperton Lodge Estate, Alperton, Middlesex, about 42¼ acres, together with the residence. Auctioneers as above.

✱APRIL 22 AND 23.—**Peacehaven, Sussex.**—Harry Jas. Burt & Son will sell by order of the Peacehaven Building and Supply Co., Ltd., (who are relinquishing the building branch of the business), building materials, timber, steel window frames, &c. Auctioneers, Steyning, Sussex.

APRIL 27.—**Farnborough, Hants.**—Hampton & Sons will sell, at the St. James's Estate Rooms, 20, St. James's-square, S.W.1, freehold building lands, forming part of the Farnborough Hill Estate, Farnborough, Hants, important road frontages, woodlands and pasture lands, superior cottage, in all extending to about 87 acres. Auctioneers, 20, St. James's-square, S.W.1.

✱APRIL 27.—**London.**—Bradshaw, Brown & Co. will sell, in lots, at No. 1, Jewry-street, Aldgate, E.C., plant and machinery, builders' materials, office furniture, &c. Auctioneers, Billiter-square Buildings, E.C.3, and at Brentford.

✱APRIL 27.—**London.**—J. T. Skelding & Co. will sell, without reserve, by order of the trustee, E. H. Hawkins, Esq., F.S.A.A., *re* Wills & Chaplin, at 344, Old-street, E.C., saw mill engineers' stock-in-trade, plant, and machinery. Auctioneers, 48, Gresham-street, Guildhall, E.C.2.

✱APRIL 29.—**Tottenham.**—J. T. Skelding & Co. will sell, without reserve, by order of the owners, on completion of contracts, on land (adjoining No. 594), Seven Sisters-road, Tottenham, builders' and contractors' plant and materials. Auctioneers, 48, Gresham-street, Guildhall, E.C.2.

✱MAY 4.—**Berkshire.**—Hampton & Sons will sell, at the Estate Rooms, 20, St. James's-square, S.W. freehold property, with vacant possession, at Maidenhead known as "The Fishery," on the River Thames, in all, over 3¼ acres; also building site of 1¼ acre.

✱MAY 6.—**Worthing.**—Patching & Co. will sell the freehold Marine Estate known as Seamill Farm, Brighton-road, comprising about 10 acres. Auctioneers, 1, Chapel-road, Worthing.

✱MAY 18.—**Isle of Wight.**—Freehold property, at Yarmouth, I.O.W., known as "Roffard House," freehold residence; also building estate of nearly 14 acres, with vacant possession. Auctioneers, 20, St. James's-square, S.W.1.

✱MAY 18.—**Kent.**—Freehold property, at Bromley, known as "Church House," with vacant possession.

✱MAY 20.—**Bexhill-on-Sea.**—Humbert & Flint, in conjunction with Stevens & Sons, will sell, in numerous lots, at the Highwood Golf Club House, freehold building land of about 30 acres, 5,000 ft. frontage to public roads. Auctioneers, Stevens & Sons, 1, Sea-road, Bexhill-on-Sea; Humbert & Flint, 11, Serle-street, Lincoln's Inn Fields, W.C.2, and Watford, Herts.

✱JUNE 8.—**MIDDLESEX.**—Freehold building land, at Pinner, of over 2¼ acres, with vacant possession.

Public Appointments.

✱APRIL 24.—**Doncaster.**—CLERK OF WORKS.—Required by the Borough Council, in connection with the erection of houses and the construction of roads, sewers, &c., on the various housing sites. The appointment will be for the duration of the work. R. E. Ford, Housing Surveyor, 3, Priory-place, Doncaster.

✱APRIL 26.—**Exeter.**—Clerk of Works required by the City Council to supervise the erection of 154 concrete and 30 brick houses. John Bennett, City Architect, Exeter.

✱APRIL 28.—**Sheffield.**—Two Architectural Draughtsmen, one qualified Surveyor, required by the City Council. City Architect, Architect's Department, Sheffield.

APRIL 30 (FIRST POST).—**India Office, Whitehall.**—Surveyor and Clerk of Works required by the Secretary of State for India on his establishment, which will be vacant on June 10, 1926. Establishment Officer, India Office, S.W.1.

✱MAY 1.—**Middleton, Lancs.**—Architectural and Town-Planning Assistant required by the Town Council in the Borough Engineer's and Surveyor's and Borough Architect's Department. J. P. Walmsley, Town Clerk, Town Hall, Middleton, endorsed "Architectural Assistant."

✱NO DATE.—**Kenya.**—Clerks of Works (two) required by the Government of Kenya, for the Public Works Department, for a tour of 30 months' service. Apply at once by letter, Crown Agents for the Colonies, 4, Millbank, Westminster, London, quoting M/14436.

✱NO DATE.—**Kenya.**—Building Foreman required by the Government of Kenya for the Public Works Department, for a tour of 30 months service. Apply at once by letter, Crown Agents for the Colonies, 4, Millbank, Westminster, London, quoting M/14438.

✱NO DATE.—**Sierra Leone.**—Foreman of Works required by the Government of Sierra Leone for the Public Works Department for two tours each of 12 to 18 months' service, with possible extension. Apply at once by letter, Crown Agents for the Colonies, 4, Millbank, Westminster, S.W.1, quoting M/14,278.

✱NO DATE.—**Sudan.**—Three Foremen of Works, age from 26 to 32, single, required by the Sudan Government Public Works Department. Advisory Engineer, Sudan Government: London Office, Wellington House, Buckingham-gate, S.W.1, marking envelope "Foreman of Works."

Building Materials Research.

Various scientists are at present at work in our national universities investigating problems connected with the building industry. Professor C. H. Desch is at work at Sheffield on the preservation of stone; at Birmingham University two scientists in the Physics departments are devoting their attention to the percolation of water through brick, stone and mortar; while at Oxford, Professor Jenkin is studying the effect upon buildings of the vibration caused by heavy motor traffic and underground railways. At Bristol University a chemical investigation is being carried out under the direction of Professor J. W. MacBain. This is all part of the research work that is at the present time being conducted under the guidance of the Department of Scientific and Industrial Research.

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SHEFFIELD BRICK-MAKERS' ANNUAL DINNER

THE annual dinner of the Sheffield and District Brickmakers' Association was held recently, the chair being occupied by Mr. A. J. Forsdike (President).

Proposing the toast of "The Association," Mr. H. J. C. Johnson, of Leeds (Chairman of the Building Materials Manufacturers' and Suppliers' Association), said that, according to the last census, 5,500,000,000 bricks were produced per year, and the Sheffield and District Association produced 2¼ per cent. of that total.

Replying to the toast, the President said they were proud of what they had done towards the housing of the people of the district. At the present time there was no shortage of bricks in Sheffield. A number of steel houses were being built, and the whole of the opposition to them had come from the operatives' side of the industry. They, as brickmakers, hoped that in the near future they would be able to persuade those responsible for housing that the brick-built house was superior to all others.

Councillor T. H. Johnson, of Doncaster, gave the toast of "The City and Trade of Sheffield, and said brick was more imperishable than stone. The Romans, who had unlimited supplies of labour, tried all kinds of building material, but they always returned to brick.

The toast was responded to by the Lord Mayor of Sheffield (Alderman J. Benson), and by the Mayor of Rotherham (Alderman R. Dewar).

Mr. J. C. Ward (ex-President of the Sheffield Chamber of Commerce) asked them not to condemn all at once steel used for building purposes. Speaking of the heavier industries, he could say that by the reduction of production costs Sheffield had set a notable example to all other steel makers in the world.

Councillor Reeves Charlesworth proposed "The Housing Committees of Sheffield and District." Responding, Alderman A. J. Bailey (Chairman of the Sheffield Estates Committee) said he was satisfied that the brick house was the best house and the safest house for a man to live in. If they could get the bricks, and the bricklayers to lay them, the policy of the Sheffield Housing Committee was brick houses.

"Our Guests" was proposed by Mr. F. G. Foster (Doncaster) and responded to by Major C. B. Flockton and County Alderman E. Dunn (Maltby).

Birmingham Hospital Scheme.

Proposals are under discussion at Birmingham for co-ordinating the work of the hospitals at a common centre in open surroundings away from the built-up parts of the city. The site chosen must be accessible and within reach of those training for the medical profession. Taking into account the hospital needs of the next 50 or 100 years, a site of something like 100 acres will be required.

Institution of Fuel Economy Engineers.

The Secretary of this Institution writes to point out that the body has been established solely in the interests of those who are dealing with fuel problems in their various aspects. The primary objects of the Institution are: (*a*) To promote the science and practice of fuel economy engineering in all its branches, and to give encouragement to the use of inventions and an impulse to methods likely to be useful to the members of the Institution; (*b*) to enable engineers and others interested in the production, preparation use, and combustion of fuel to meet and correspond, and to facilitate the interchange of ideas respecting improvements in the various branches of fuel technology, particularly in regard to the economical preparation and combustion of fuel for industrial purposes, and the publication and communication of information on such matters. The Secretary is Mr. H. L. Pirie, and the address of the Institution is 26, Victoria-street, S.W.1.

PROPOSED NEW BUILDINGS & OTHER WORKS*

IN these lists care is taken to ensure the accuracy of the information given, but it may occasionally happen that, owing to building owners taking the responsibility of commencing work before plans are finally approved by the local authorities, "proposed" works at the time of publication have been actually commenced. Abbreviations: T.C. for Town Council; U.D.C. for Urban District Council; R.D.C. for Rural District Council; E.C. for Education Committee; B.G. for Board of Guardians; B.C. for Borough Council; P.C. for Parish Council; M.H. for Ministry of Health; M.T. for Ministry of Transport; C.B. for County Borough; B.E. for Board of Education; M.A.B. for Metropolitan Asylums Board; and M.W.B. for Metropolitan Water Board.

ADWICK-LE-STREET.—The U.D.C. has, subject to the Surveyor's plans, decided to build 60 houses each at Woodlands and Carcroft.

ARMAGH.—The U.D.C. has recommended that the plans and specifications for fourteen houses proposed to be erected in Navan-street be approved.—The R.D.C. propose to erect 105 cottages at a total cost of £37,290.

ASHTON-UNDER-LYNE.—The Borough Surveyor has been asked to prepare a lay-out of a housing site consisting of about 10 acres of land, at the junction of Broad Oak-road and Red-lane.—The Housing Committee have also inspected a site for houses on Mossley-road.—Permission has been received from the M.H. to acquire the plot of land and buildings in Henry-square for the erection of a proposed new fire station.

BARNSTAPLE.—The T.C. has received the M.H. approval to erect 32 non-parlour type houses at Fair View.

BASINGSTOKE.—The Corn Exchange is to be rebuilt.

BATH.—The City Engineer submitted a report to the T.C. upon alternative schemes for the erection of 24 houses on the Larkhall housing site, and the Council resolved that application be made to the M.H. for sanction to the borrowing of £9,720, the estimated cost of the erection of the houses, and tenders be invited.—The City Engineer also submitted a report with regard to the development of Newbridge-road housing site involving leasing of 14 building plots fronting Newbridge-road and the erection of 86 houses on the remainder of the site north of the L.M. & S. Railway line. This the Council approved, and recommend that application be made to the M.H. for sanction to the leasing of the 14 building plots fronting Newbridge-road, and to the borrowing of £40,330. Tenders are to be invited for the erection of the 86 houses.—The Town Clerk has reported upon an offer to sell to the Corporation certain land adjoining Southdown-road for housing purposes, and the Council has accepted the offer.—The City Council are recommended to approve the construction of a new bridge at the Old Bridge as recommended by the City Engineer.—The City Engineer is to be asked to assist the Waterworks Engineer in preparing the scheme for alterations to premises in Bilbury-lane.—The ladies' convenience, Orange-grove, is to be repaired at once by the City Engineer.—Plans of proposed additional offices for boys at the Kingsmead Council school have been approved for submission to the B.E.—Application is to be made to the Electricity Commissioners for sanction to the borrowing of £5,000 to meet the estimated expenditure on sub-stations for the next two years.

BEDDINGTON AND WALLINGTON.—The U.D.C. passed plans: Stafford-road, 12 semi-detached houses for W. Martin; Boundary-road, bungalow, for W. A. Monk; Stafford-road, 12 houses in two blocks of six, for T. Markwick & Co.

BELFAST.—The surveyor has submitted to the Improvement Committee of the C.B. a plan furnished by the engineer of the Great Northern Railway for widening the Boyne Bridge, Durham-street, at an estimated cost of £47,000.

BELSTONE.—The Okehampton R.D.C. has resolved to negotiate at once for the purchase of a field of 2½ acres for housing purposes.

BLACKBURN.—The E.C. proposes to convert Bangor-road school into a central school.—The Borough Engineer has prepared plans for the widening of the Canal Bridge, near the Royal Infirmary.—The E.C. are considering a scheme for the extension and improvement of the Technical College, at an estimated cost of £45,000.

BLACK NOTLEY.—Essex C.C. have acquired 25 acres for the extension of Black Notley Sanatorium.

BLACKPOOL.—The C.B. passed various plans, including seven houses, Lonsdale-road, for Mrs. Bourne, and 24 houses and six garages, Kimberley-avenue, for Potts & Pickford.—The C.B. is to make application to the M.H. for the sanction to borrow £53,000 for the construction of new refuse destructor at Bispham.—The C.B. has resolved that application be made to the M.H. for the sanction to the borrowing by the Corporation of the sum of £13,000 for the erection of 26 houses in Hawes Side-lane, and £8,000 for the erection of a new garage at Rigby-road depot.—The E.C. has passed the specifications and plans for Abbey-road school, and the Surveyor has been asked to have quantities taken out and obtain tenders.

BLYTH.—The T.C. has considered the provision of new urinals in the borough and recommended that provision be made in the next rate estimate for the reconstruction of the urinal in the Market Place, at an estimated cost of £350.—A minor sub-committee is to report with reference to suitable sites for a Central school.

BOLTON.—The T.C. passed plans: T. Blakley, eight houses, off Rishton-lane; S. Main, eight houses, Chorley Old-road; Leigh Bros., Ltd., 12 houses, Conway-avenue; A. S. Woods, 34 houses, Inverlael-avenue; W. Andrew, 26 houses, Thompson-road and Meliden-crescent; E. Howarth, 12 houses, Lever Edge-lane; F. Draper, 13 houses, Gregory-avenue; F. H. Cartwright, nine houses, Pengwern-avenue; The Governors of Bolton Grammar School, pavilion off Chorley New-road.

BOURNEMOUTH.—Application is to be made by the T.C. to the M.H. for sanction to borrow £350 for alterations to the convenience at the corner of King's-road and Charminster-road.—The T.C. has passed plans for various buildings, including 13 garages, rear of 410 and 412, Wimborne-road Tarrant, Drake & Pool; nine houses, The Grove, Redhill, and six houses (corner), Ashton-road, H. C. Barnes.

BOVEY TRACEY.—An appeal is to be made for funds to erect a chapel in connection with the Hawkmoor Sanatorium for consumptives, near Bovey Tracey. The scheme is estimated at £800.

BRADFORD.—A start is shortly to be made with the erection of new chapel buildings for the Horton Bank Primitive Methodist Church. The estimated cost is about £5,400, and accommodation will be provided for about 350 persons.

BRAINTREE.—Essex C.C. has voted £2,000 for the adaptation of the old County Court for child welfare and other health purposes.

BURNLEY.—An alternative site to Harold-street for the building of houses for people dispossessed by the Finsley Gate clearance order, and by the clearance of the site for the erection of the new Central Library, which was recommended by the Housing and Town-Planning Committee, has been approved.

BURY.—The R.D.C. has approved plans for the erection of a sub-station in Hollins-lane, Unsworth, for the Lancashire Electric Power Co.

CANTERBURY.—The T.C. has received sanction from the M.H. to the borrowing of £25,500 for erection of houses on the St. Martin's Hill site. The Ministry has also approved the tender for this work.

CHEADLE.—The Isolation Hospital Committee of the R.D.C. recommended that a veranda be erected on the west side of the scarlet fever block, and that the type be one of glass and iron, with a concrete floor. The surveyor has been instructed to obtain further tenders.

CHELTENHAM.—The T.C. are inviting tenders for carrying out the River Chelt improvement scheme.

CHESTERFIELD.—The T.C. have approved plans prepared by C. Jackson, architect, for the erection of a new Baptist Chapel in Cross-street.

CHESTER-LE-STREET.—The Isolation Hospital Board proposes to add a new wing to the hospital, at an estimated cost of £13,650.

CHICHESTER.—The E.C. are to erect a new class-room at the Lancastrian Girls' School, at a cost of £550. The provision of a cookery centre is suggested, at a cost of £1,400.

CONSETT.—Mr. F. A. Coyle, L.R.I.B.A., 29, Newmarket-street, is preparing plans for the erection of a new Catholic School at Newhouse, Co. Durham.

CREWE.—The L.M. & S. Rly. propose to carry out the rebuilding and reorganising of the Crewe workshops.

CROSTON.—The U.D.C. has received sanction for the erection of another 16 houses.

DAGENHAM.—The Essex E.C. has obtained sanction to borrow £30,500 for the erection of an elementary school at Calance-road.

DEWSBURY.—The E.C. has approved of plans for the conversion of Highfield House into a hostel for the blind, at an estimated cost of £11,700.

DOVER.—The Corporation are negotiating for the acquisition of Noah's Ark Farm for a housing scheme.—The Housing Committee are considering the erection of further houses.

DOWNHAM.—The Housing Committee has passed plans and estimates by Mr. W. Jarvis, architect, for the erection of 12 houses upon the site in Paradise-road. Application is to be made to the M.H. for sanction to a loan of £5,080 for the scheme.

DUNSTON.—A new Mission Church is to be erected upon a site near the Hexham main road. Tenders are to be invited.

EASTBOURNE.—The B.G. has decided to carry out extensions of the infirmary and other improvements at a cost not exceeding £24,500.—The Library Committee are considering the purchase of the Rising Sun, Seaside, for purposes of a branch library.

EAST HAM.—The Borough Engineer has submitted alternative plans and estimates for the provision of additional office accommodation at the municipal buildings and the B.C. has also recommended that the Borough Engineer be instructed to prepare detailed plans and estimates in connection with two schemes submitted.

EPSOM.—Approval has been given to the extension of the central heating and hot-water services to certain portions of The Downs Hospital for Children, at a total cost estimated by the engineer-in-chief at £4,915.

GARSTANG.—Schemes are being considered by the R.D.C. for the construction of a new bridge over the River Wyre, at a point on the Fleetwood side of the Sheard Bridge (Toll), also for the widening of Carver's Bridge.

GLOUCESTER.—The E.C. has approved plans for the erection of a new grammar school at Chipping Campden, at an estimated cost of £16,500.

GODSTONE.—The Postmaster-General is obtaining a site for a telephone exchange.

GUILDFORD.—The R.D.C. has received the sanction of the M.H. to borrow £160 for the purchase of land at Wickham Farm, Pirbright, for the erection of working-class dwellings.—The T.C. passed plans: 18 semi-detached houses, Litchfield Way, by Knapp-Fisher, Powell & Russell, for Onslow Village, Ltd.; 15 houses, Beckingham-road, by H. W. Frampton & Co., for W. H. Frampton & Co., North-street; 12 semi-detached villas, Aldershot-road, by E. R. Kent, for Mr. Holford.

HADLEIGH.—The Essex E.C. has obtained sanction for a loan of £4,000 for extensions at the elementary school.

HAM (SURREY).—The District Council intend to support the building of sixteen terrace and eight semi-detached houses in Lock-road, subject to the sanction of the M.H.

HARROGATE.—The T.C. has approved proposals for the borrowing of £54,000 for street improvements and work in connection with the electricity and water undertakings.

HAYWARDS HEATH.—The U.D.C. has purchased a site at Munster Green for the erection of a public hall and municipal offices.

HEMSWORTH.—The B.G. are proposing extensions to the Infirmary.

HETTON.—Plans approved by the U.D.C.: Group of twelve aged miners' homes, in Houghton-road, for the Hetton, Eppleton, and Elemore Aged Miners' Homes Committee; and ten bungalows at Easington-lane, for the Housing Committee.

HOLYHEAD.—The U.D.C. has received a report of the Town Development Committee in regard to the £50,000 beach development scheme which it had previously been decided should be submitted to a town's meeting for approval.

HORLEY.—Mr. R. L. Norris is to erect an assembly hall at Victoria-road.

HORSFORTH (YORKS).—The U.D.C.'s Surveyor is instructed to obtain tenders for the alteration and extensions of the Council offices, and the providing of a fire-proof storage room, at an estimated cost of about £660.

HOVE.—The T.C. approved plans for E. J. Love for D. S. Barclay, five pairs of semi-detached houses and garages, Braemore-road; six pairs of semi-detached houses, Braemore-road; pair of semi-detached houses, Braemore-road (west side); pair of semi-detached houses, Kingsway, between Braemore-road and Berriedale-avenue.

HULL.—The E.C. suggest a site in Inglemire-lane for the erection of an elementary school.—Tenders are to be obtained for painting at thirteen schools.—Victoria Pier is to be replanked, at a cost of about £300.—On behalf of the National Provincial Bank, Messrs. J. F. Haller & Co. are inquiring for a site in the vicinity of the New North Bridge.

ILFORD.—Mr. W. J. Cearns is to erect a church hall in Clements-road.

LEAMINGTON.—The T.C. has approved a scheme for the reorganisation of the elementary schools in the borough, it being proposed that there shall be senior and junior schools, and that better provision be made for the teaching of handicrafts and domestic science.—It has been decided to prepare plans for 60 non-parlour type houses, and two pairs of parlour type on the Rushmore Farm estate.

LEAVESDEN.—The M.H. has approved £5,835 7s. 11d. towards the cost of the erection of a nurses' home at Leavesden Mental Hospital.

LEEDS.—The M.H. has sanctioned the borrowing of £31,000 for new institution for the blind, £4,200 for training school for the blind, £7,900 for purchase of land in Oxford-row for extension of fire station, and £2,400 for purchase of buildings in Oxford-row for extension of fire station.—The T.C. has resolved that a plot of land at the corner of Cecil-road and Salisbury-grove, Armley, comprising an approximate area of 80 square yards, together with the buildings, be purchased from the Armley Liberal Club, Ltd., for the purpose of the erection of a transformer chamber.—Ind Coope & Co., Ltd., are considering the purchase of land on the Middleton housing estate for the erection of a club.—The T.C. are to invite tenders for the erection of 26 houses on land on the Cross Gates housing estate.—The Church Army Housing, Ltd., are to erect 12 working-class dwellings, subject to the M.H. approval.—The Electricity Committee recommend that the Redcote Farm estate, Kirkstall, comprising approximately 104 acres, together with the new bridge giving access thereto, be purchased.—Plans passed: W. Ripley, 24 houses, estate off Cardigan-lane and Walmsley-road; J. A. Bonner, eight semi-detached houses, Scott Hall-road and Stainbeck-lane; A. Booth, 34 semi-detached houses, Old-lane, Beeston; H. Lax, Ltd., 22 semi-detached houses, Roxholme-avenue, Harehills-lane; H. & E. Lolley, eight semi-detached houses, Bentley-parade and Mount, Meanwood; H. Broadbent, 12 semi-detached houses, Estcourt-terrace, Headingley.

LEYTON.—The U.D.C. passed plans: H. G. Needham, nine houses at Becontree-road; Stoneley & Co., 20 houses, Hainault-road; County of London Electric Supply Co., Ltd., electric transforming sub-station at Cathall-road.

LINCOLN.—The local Co-operative Society has purchased a plot of land of 17 acres, for the erection of 200 houses.

LITTLEBOROUGH.—Plans are being prepared for the erection of new office premises at the Pythorn Mill, for the British Visida Silk Co., Ltd.

LIVERPOOL.—The E.C. recommend that, subject to the approval of the B.E., the plans prepared by the Land Steward and Surveyor for the provision of additional accommodation at the Larkhill (Lisburn-lane) Council School, viz:—the provision of two classrooms, and a Laundry and Housewifery Centre, be adopted.—The T.C. recommend that, subject to the consent of the M.H., the piece of land situate on the east side of Mather-avenue be transferred to the Watch Committee, for the purpose of the erection of a police and fire station and dwellings.

LONDON.—The M.A.B. has approved the carrying out, at a cost estimated by the engineer-in-chief at £105, of repairs, &c., to the floors of wards 5, 7 and 8, the maids' dining-room and the nurses' sitting-room at the North-Western Hospital.—Approval has also been given to the carrying out at a total cost of £680, subject to the sanction of the M.H., of alterations and improvements to the two sick staff wards at the South-Western Hospital.

LONDON (HACKNEY).—The M.A.B. recommend that, subject to the sanction of the M.H., approval be given to the provision at Hackney Casual Ward of lavatory accommodation, at an estimated cost of £250.

* See also our List of Contracts, Competitions, etc.

LONDON (KENSINGTON).—The B.C. recommend that application be made to the L.C.C. for sanction to the borrowing of the sum of £20,000 for housing purposes in Virginia-place.—The Council has recommended £400 for the erection of an external iron staircase leading from the gallery of the Argyll Hall into Blechynden Mews and for various alterations.

LONDON (LAMBETH).—The M.A.B. recommend that, subject to the sanction of the M.H., and to the consent of the Lambeth B.G., approval be given to the extension of the laundry and the building of a new sitting-room for the superintendent at Lambeth Casual Ward, at a total estimated cost of £670.

LONDON (LEWISHAM).—The B.C. passed plans: Matthews & Ridley, addition to Lewisham Hospital, and to construct sewage pumping chamber, High-street, Lewisham; Fisher, Sutton & Co., 33 houses, Parbury-road; Jas. H. Pearson, 8 houses, Upper Coife-road.

LONDON (STEPNEY).—The B.C. are proposing the acquisition of Norway House, Limehouse, for the extension of the Limehouse Public Library.—The Housing Committee propose to acquire properties in Vallance-road at a cost of £16,000, for housing purposes.—The Council are also proposing to obtain 13–17, Princes-square, St. George-in-the-East, for the erection of an electric sub-station. The scheme will cost about £6,660.

LONDON (WOOLWICH).—Tenders are being invited for the building of a new L.C.C. secondary school for boys in Red Lion-lane.

LONGTOWN.—The R.D.C. has approved plans for the erection of a new auction mart.

LOUTH.—The Governors of Louth Grammar School propose to erect new school buildings to accommodate 150 boys.

LUDDENDENFOOT (YORKS)—The U.D.C. has approved of plans for the erection of 24 houses which G. H. Wilson, of Halifax, is erecting.

MAIDSTONE.—The T.C. passed plans: St. Philip's-avenue, six houses, for C. A. Walter; London-road and Poplar-grove, 22 houses, for Cox Bros.

MANCHESTER.—The M.H. has held an inquiry into the application of the Baths Committee, who proposes to erect in Chorlton-cum-Hardy two plunge baths, sixteen washbaths, and Turkish baths, at a cost of £34,500.—Land and property is to be purchased, at a cost of £150,000, in connection with the town hall extension scheme.—The Rochdale Canal bridge at Miles Platting is to be reconstructed at a cost of £6,250.—The dining-hall at Baguley Sanatorium is to be re-roofed at a cost of £350.—A new staircase is to be constructed at Walton lodging house, at a cost of £200.—Gwrieddyn Farm is to be acquired for purposes of the Abergele Sanatorium,—A scheme for the extension of the technical college is being considered.—Approval has been given to plans for a new elementary school at Boyle-street, Cheetham.—A Traffic Sub-Committee are to report in regard to the proposal for the construction of a subway between Exchange station and the Cathedral yard, and the removal of the Oliver Cromwell statue and other structures in streets.—The City Council have received sanction to borrow £8,605 for the erection of a school clinic at Newton Heath.—Plans for the proposed new school at Boyle-street, Cheetham, have been submitted for approval to the B.E.—Plans are to be prepared for structural alterations to the Jackson-street police station to provide additional accommodation.

MARLBOROUGH.—The Buildings and Land Committee of the T.C. recommended the approval of plans for 28 houses in Lainey's Close.

NANTWICH.—A site is to be acquired for the erection of a new post office.

NELSON.—Revised plans are to be prepared for the erection of a secondary school.—Plans have been approved for the erection of new club premises in Peter-street, for the Jubilee Working Men's Club.

NEWCASTLE (Ireland).—The U.D.C. has approved plans for reconstruction and new houses submitted by Rev. D. J. M'Williams, P.P., Messrs. John A. Dickson, and Mr. M'Cready. Mr. John Nugent desired the sewer on Dundrum-road extended in order to permit of the erection of 26 houses.—The Council has decided to ask the Ministry of Home Affairs to approve of their offer of the corner site of their field for a technical school.

NEWCASTLE.—School-building projects in the diocese of Hexham and Newcastle, which are in the hands of architects, include erections at Wallsend, Feling, Sunderland, Stockton, Stanley, Brooms, Consett, and Newhouse.

NEWCASTLE-UNDER-LYME.—Plans passed by the T.C.:—12 houses on the Seabridge-road Farm estate.

NEW MILLS.—The D.C. has purchased an additional site for the erection of more dwellings.

NEWTON ABBOT.—The U.D.C. are proposing to build 100 more houses at Broadlands.

NOTTINGHAM.—Members of Southwark-street School Old Scholars' Association are endeavouring to raise a substantial sum towards their final objective of £3,000, the minimum amount required before embarking upon the building scheme to provide permanent headquarters and an institute.—Sir Jesse Boot has formulated a scheme for the erection of a group of 35 maisonnettes on a site near Castle Boulevard. The architect is S. M. Eaton, A.R.I.B.A.

OLDHAM.—The B.G. propose to make extensions to the Nurses' Home at the Boundary Park Hospital. Plans by C. T. Taylor, Roberts & Bowman, architects, 10, Clegg-street.

OXFORD.—The T.C. again recommend the purchase of land for housing purposes.—Application is to be made to the M.H. for sanction to a loan of £394 for the construction of a public convenience at Paradise-street.—The Council recommend the erection of 14 semi-detached houses at the entrances to the city, at a cost of £11,200. Application is to be made to the M.H. for sanction to the scheme and permission to borrow the money.

PATCHAM.—The Steyning East R.D.C. has approved plans and estimates for the erection of 20 houses.

PETERBOROUGH.—The Ministry has sanctioned the loans of £21,900 and £1,100 for the completion of Part 2 of the R.D.C. housing scheme.

PLYMOUTH.—Application is to be made to the Electricity Commissioners for sanction to borrow the sum of £75,000 for new mains and services.—The Water Engineer is to rebuild a portion of the boundary wall at the Drake's-place Reservoir, which has collapsed.—The Council has approved the application of the Watch Committee for the allocation of a site at Pottery Quay for the purpose of a weigths and measures testing office, subject to the exact position of the site being agreed with the Borough Surveyor.—The Borough Surveyor has been instructed to obtain tenders for the erection of a new lavatory at Milehouse. A loan of £2,100 has been sanctioned by the M.H.—The Borough Surveyor has also been instructed to carry out certain renovations to the pavilion at the Victoria Park Bowling Green.—The Borough Surveyor is inviting fresh tenders for the painting of the Market premises.—A sum of £100 has been allotted for the removal of the convenience of 24 Market-avenue from the basement to the upper floor.—The Engineer has been authorised to commence forthwith the work of extension of the Milehouse depot shed, and tenders have been invited for brick piers, gable end and slating of the building. The estimated cost of £850 is included in the revenue estimates.—Plans passed: A. C. Jones, 18 houses, Tavistock-road, Milehouse; H. L. Pile, four houses, Tavistock-road, Milehouse, three garages rear 6, 9, and 10, Trevarthian-terrace, five houses, West Down-road.—The Public Health Committee propose to re-organise the following hospitals:—Efford Sanatorium, at £47,000; Mount Gold Extension, at £30,000; Swilly Extension, at £4,500.

PONTEFRACT.—Plans have been approved for the lay-out of building estate in Spital Hardwick-lane, for B. Townend.—An amended lay-out plan of the Baghill housing estate, providing for 100 parlour and 172 non-parlour type houses, was approved by the T.C.

POOLE.—The T.C. passed plans for a number of houses, including 10 houses, Ringwood-road, for Dacombe & Rabbetts.

PRESTON.—The Board of Management of the Queen Victoria Royal Infirmary are to erect a new wing containing three wards with 80 beds, an additional operating theatre with consulting rooms, additional rooms for nurses and domestic staff, maternity, rest rooms, enlargement of certain technical rooms, artificial sunlight treatment room, heating and lighting, estimated to cost £47,000.

RAINHAM.—Sanction for a loan of £3,250 has been obtained by the Essex E.C. for the provision of new class rooms at the elementary school.

ROCHFORD.—The Housing Committee of the R.D.C. recommended the purchase of a site at Eastwood. Sanction is also to be obtained for the erection of 24 houses on the site.

ROUNDHAY.—A public meeting has been held to consider a scheme for erecting a Parochial Hall in celebration of the centenary of the building of St. John's Church, Roundhay.

SALFORD.—The C.B. are to make application to the M.H. for sanction to borrow the sum of £34,357 to cover the cost of the erection and completion of slipper baths and washhouse on land situate at Hodge-lane, Salford.

SHEFFIELD.—The application of the Corporation for an order for the compulsory acquisition of 208 acres of land in connection with the Longley Estate, Firth Park, has been the subject of an inquiry conducted by the M.H. The scheme is for 2,000 houses.

SKIPTON.—Funds are being made to meet the cost of a proposed new Parish Room at Christ Church, Skipton.

SOUTHEND-ON-SEA.—The premises of the Sacred Heart Roman Catholic Schools are considered to provide inadequate accommodation. Plans for additions have been prepared by Buries, Harris & Collings, architects, Clarence-street.

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SOUTH SHIELDS.—The Corporation are negotiating for property in Park-street required, for fire brigade purposes.—A site at Harton is to be obtained for the erection of an elementary school.—A site in the Tyne Dock area is to be obtained for a depot.—The M.T. has agreed to a grant for the scheme, to cost £33,000, for the river Don diversion.—Further negotiations are proceeding with the L.N.E.R. regarding the widening and reconstruction of Dean-road bridge.—The Borough Engineer has submitted a plan for the erection of twelve shops with houses above on the southern portion of the shopping site at the east end of Park-avenue. The cost is estimated at £780 each.

SPENBOROUGH.—Messrs. Bain, Law & Co., Ltd., are to erect new offices in Law-street, and the Yorkshire Electric Power Co., Ltd., are to erect a new electricity sub-station at Valley-road, Liversedge.

STALYBRIDGE.—A new telephone exchange is to be established in the town. A central school at West Hill is to be proceeded with without delay.

STOKE-ON-TRENT.—The Corporation have called for estimates for increasing the seating accommodation at Burslem Baths.—Estimates are to be obtained for painting baths and markets.—Sanction has been obtained for a loan of £31,200 for the erection of 64 houses at Cowper-street, Fenton, and a contract has been entered into with Finney & Broadhurst for the immediate erection of the houses.—Land is being purchased for extending the Northwood Park housing site.—The Housing Committee are considering the purchase of 32 acres at Brent Vale for housing purposes.—Land in Hanford is to be acquired for housing and recreation purposes.—The Board of Control have asked the Corporation to consider the provision of institutional accommodation for mental defectives.

SUNBURY.—The U.D.C. has decided to buy 2½ acres of land fronting Cavendish-road, so as to proceed with the erection of 32 houses, subject to the approval of the M.H.

SUNDERLAND.—The proposed compulsory acquisition of land in the Newcastle-road by the Corporation for housing purposes was the subject of an inquiry held by the M.H.—Plans for reconstructing the heating and hot-water equipment at the Sunderland Poor Law Institution have been prepared. The cost of the scheme is estimated to be about £30,000.

TAMWORTH.—Plans have been approved for new buildings to replace the condemned schools in St. John's parish, estimated to cost £5,400.

TARRING.—The Broadwater Building Co. are to erect 88 houses in St. Andrew's-road.

THORNE.—Plans for the erection of a new picture palace have been approved by the R.D.C.—The R.D.C. has decided to obtain estimates for the rebuilding of Jubilee Bridge.

THUNDERSLEY.—Essex E.C. has received sanction to borrow £1,650 for a further enlargement of the elementary school.

TILBURY.—Extensions and improvements are to be undertaken at the Upper Ward elementary school, the Essex E.C. having obtained sanction for a loan of £3,600 for the purpose.

TOTTENHAM.—The U.D.C. has passed plans for 254 houses, twenty shops with flats over, and eight garages.

TRAWDEN.—Plans have been approved for the erection of new store premises in Lane House-lane, for the Trawden Co-operative Society.

UXBRIDGE.—A new reservoir is to be erected at a cost of £5,725.

WATFORD.—The Corporation propose the erection of conveniences at Watford Fields, at Nascot-avenue and at Bushey Arches.—The Gamma Manufacturing Co. propose the establishment of a glue factory at The Rookery.—The Borough Engineer is to prepare plans for alterations to increase the accommodation at the municipal offices.

WEETSLADE.—The U.D.C. has approved the lay-out for the erection of 50 houses.

WHITBY.—The M.H. has held an inquiry into the application of the U.D.C. for sanction to borrow £2,650 for the extension of the band pavilion on the Spa.

WHITEHAVEN.—The design of the Trussed Concrete Steel Co., Ltd., has been accepted for the erection of a reinforced concrete reservoir at Harras of a capacity of 360,000 gallons, and the Borough Engineer is now to prepare a detailed estimate of the cost of the works.—A loan of £4,500 is to be obtained for the purchase of the old infirmary, which is to be converted into a central school.—A loan of £1,250 is to be obtained for the erection of conveniences at Market Hall.

WIGAN.—The Baths Committee are considering schemes for the erection of washhouses, swimming bath and slipper baths adjacent to the site of the proposed new elementary school in Leader-street, Pemberton. The plans are being got out by the Borough Engineer.

WIMBLEDON.—Approval has been given to plans for the improvement of Ashcombe-road bridge.—Estimates are to be obtained for the construction of a bowling green in Garfield Recreation Ground.—Approval has been given to plans for the construction of a new swimming bath at Latimer-road.—The Borough Engineer is negotiating with the County Surveyor regarding the underpinning of Coombe Bridge over the Beverley Brook.—Sanction has been given for a loan of £7,500 for the development of Home Park.—Tenders are to be invited for the construction of a reinforced concrete terrace and chalet at Home Park.

WORTLEY.—The R.D.C. has decided to proceed with the making of a new road from a point near "The Crown" Inn, High Green, to Hagmanstone Bar, at Birdwell. The estimated cost is £128,500.

YORK.—Plans have been submitted to the M.T. by the Streets and Buildings Committee of the Corporation for the proposed bridge over the Ouse at Fulford. The drawings have been prepared by the British Reinforced Concrete Company, who estimate the cost as £56,000.

FIRES.

GLASGOW.—An alarming fire occurred in the centre of Glasgow, whereby damage estimated at about £12,000 was done.

PRICES CURRENT OF MATERIALS

[Owing to the exceptional circumstances which prevail at the present time, prices of materials should be confirmed by inquiry.—Ed.]

BRICKS, &c.

Per 1,000 Alongside, in River Thames up to London Bridge. £ s. d.

	£	s.	d.
Best Stocks	4	3	6
Second Hard Stocks	3	18	6

Per 1,000. Delivered at London Goods Stations.

Flettons, at	£	s.	d.		£	s.	d.
King's Cross	2	13	3	Best Blue Pressed Staffs	9	5	0
Do. grooved for Plaster	2	15	3	Do. Bullnose	9	15	0
Do. Bullnose	3	8	3	Blue Wire Cuts	7	5	0
Best Stourbridge Fire Brick :—							
2½ in.	8	11	0	3 in.	10	3	0
Glazed Bricks—							
Best White Ivory, and Salt Glazed Stretchers	21	10	0	D'ble Str'tch'rs	30	0	0
				D'ble Headers	27	0	0
				One Side and two ends	31	0	0
Headers	21	0	0	Two Sides and one End	32	0	0
Quoins, Bullnose and 4½in. Flats	28	0	0	Splays and Squints	29	10	0

Second Quality, £1 per 1,000 less than best. Cream and buff, £2 extra over white. Other colours, Hard Glaze, £5 10s. extra over white.

BREEZE CONCRETE SLABS.

Delivered London.

	s.	d.		s.	d.
2in. per yd. super	1	11	3 in. per yd. super	2	9
2½in. „ „	2	4	4 in. „ „	3	6

	s.	d.		
Thames Ballast	10	6	per yd.	delivered 2 miles radius Paddington.
Pit Sand	13	9	„ „	
Thames Sand	14	6	„ „	
Best Washed Sand	14	6	„ „	
½in. Shingle for Ferro-Concrete	12	9	„ „	
¼in. „ „	14	0	„ „	
½in. Broken Brick	11	6	„ „	
Pan Breeze	7	6	„ „	

Per ton delivered in London area in full van loads.

Best Portland Cement. British Standard Specification. Test £2 18 0 to £3 3 6 51s. alongside at Vauxhall in 80-ton lots.

	£	s.	d.
Ferrocrete per ton extra on above	0	10	0
Super Cement (Waterproof)	4	8	0
Roman Cement	8	15	0
Parian Cement	5	15	0
Keene's Cement, White	5	15	0
„ „ Pink	5	10	0
Plaster, Coarse, Pink	3	0	0
„ „ White	3	12	6
„ „ Fine	5	12	0
Sirapite, Coarse	3	9	0
„ Finish	3	17	0
Grey Stone Lime	2	11	9
Chalk Lime	2	11	9
Best Ground Blue Lias Lime	2	4	6
Hair per cwt.	2	2	6
Granite Chippings	1	12	0

Note.—Sacks are charged 1s. 9d. each and credited 1s. 6d. if returned in good condition within three months carr. pd.

Stourbridge Fireclay in s'cks 35s. 0d. per ton at rly. dp.

STONE.

Bath Stone—delivered in railway trucks at	s.	d.
Westbourne Park, Paddington, G.W.R., or South Lambeth, G.W.R., per ft. cube	2	9½
Do. do. delivered in railway trucks at Nine Elms, L. & S.W.R., per ft. cube	2	11½
Portland Stone—		
Brown Whitbed, in random blocks of 20 ft. average, delivered in railway trucks at Nine Elms, L. & S.W.R., South Lambeth Station, G.W.R., and Westbourne Park, Paddington, G.W.R., per ft. cube	4	4
Do. do delivered on road wagons at above stations, per ft. cube	4	5
White basebed, 3d. per ft. cube extra.		
Note.—1d. per ft. cube extra for every foot over 20 ft. *average*, and ½d. beyond 30 ft.		
Hopton-Wood Stone—		
Delivered at any Goods Station, London.	s.	d.
Random blocks from 10 ft. and over P. ft. cb.	17	0
Sawn two sides „	27	0
Sawn three or four sides „	32	0
York Stone, Blue—*Robin Hood Quality.*		
Delivered at any Goods Station, London.	s.	d.
6 in. sawn two sides landings to sizes (under 30 ft. super.) Per ft. super	5	6
6 in. rubbed two sides, ditto „	6	0
3in. sawn two sides slabs (random sizes) „	2	3½
2 in. to 2½ in. sawn one side slabs (random sizes) „	1	6½
1½ in. to 2 in. ditto, ditto „	1	4
Hard York—		
Delivered at any Goods Station, London.		
Scappled random blocks Per ft. cube	6	3
6 in. sawn two sides landing to sizes (under 40 ft. super) Per ft. super	5	1½
6 in. rubbed two sides, ditto „	6	1½
4 in. sawn two sides slabs (random sizes) „	2	10
3 in. ditto ditto „	2	1½
2 in. self-faced random flags Per yd. super	9	0

CAST STONE.

Delivered in London Area in full van loads, per ft. cube :—Plain, 8s. 6d.; Moulded, 9s. 6d. Cills, 10s. 0d.

WOOD.

GOOD BUILDING DEAL.

Inches.	per stan.	Inches.	per stan.
4 × 11	£28 0	3 × 6	£21 0
4 × 9	25 0	3 × 11	25 0
4 × 8	24 0	2 × 11	25 0
4 × 7	23 0	3 × 9	24 0
3 × 8	21 0	2½ × 9	23 0
3 × 7	20 0	3 × 4½	22 0
2½ × 7	20 0	3 × 4	22 0

PLANED BOARDS.

1 × 11	£27 0	1 × 9	£26 0

PLAIN EDGE FLOORING.

Inches.	per sq.	Inches.	per sq.
⅝	20/-	1¼	31/-
¾	22/-	1½	34/-
1	25/-		

TONGUED AND GROOVED FLOORING.

Inches.	per sq.	Inches.	per sq.
1	25/-	⅝	16/6
1¼	31/-	¾	19/-
1½	34/-	1	24/-

MATCHING (BEST).

Inches.	s.	d.
Battens.	2	6 per 100 ft.
⅝ × 2		

SAWN LATHS.

Per bundle	0	2	4

1st AND UP THICK.

	£	s.	d.		£	s.	d.
Dry Austrian Wainscoat, per ft. cube	0	16	0	to	0	18	0
Dry American and /or Japanese Figured Oak, ft. cube	0	15	0	to	—		
Dry American and/or Japanese Plain Oak, ft. cube	0	11	0	to	0	13	0
Dry sq. edged Honduras Mahogany, ft. cube	0	16	0	to	0	18	0
Dry Log cut Honduras Mahogany, ft. cube	0	18	0	to	1	1	0
Dry Cuba Mahogany, ft. cube	1	4	0	to	1	10	0
Dry Teak, ft. cube	0	13	0	to	0	15	0
Dry American Whitewood, ft. cube	0	11	0	to	0	14	0
Best Scotch glue, per cwt.	4	10	0	to	—		
Liquid Glue, per cwt.	4	7	0	to	5	10	0

SLATES.

First quality slates from Bangor or Portmadoc carriage paid in full truck loads to London Rate Station. Per 1,000 of 1,200.

	£	s.	d.		£	s.	d.
24 by 12	37	12	6	18 by 10	21	2	6
22 by 12	34	0	0	18 by 9	18	12	6
22 by 11	31	5	0	16 by 10	17	12	6
20 by 12	29	15	0	16 by 8	13	15	0
20 by 10	25	12	6				

TILES.

Delivered at London rate stations in full truckloads of not less than 4 tons. Per 1,000 f.o.r. London.

	£	s.	d.
Best machine-made tiles from Broseley or Staffordshire district	5	12	6
Ditto hand-made ditto	5	17	6
Ornamental ditto	6	2	6
Hip and valley tiles (per dozen) Hand-made	0	9	6
Hip and valley tiles (per dozen) Machine-made	0	9	0

METALS.

Joists, Girders, &c., to London Station, per ton—	£	s.	d.
R.S. Joists, cut and fitted	12	10	0
Plain Compound Girders	14	10	0
„ Stanchions	16	10	0
In Roof Work „	19	10	0

MILD STEEL ROUNDS.

To London Station, per ton.

Diameter.	£	s.	d.	Diameter.	£	s.	d.
¼ in.	12	0	0	⅜ in. to ½in	10	15	0
⅜ in.	11	0	0	⅝ in. to 2½ in.	10	10	0

Wrought-Iron Tubes and Fittings— (Discount off List for lot of not less than £7 net value delivered direct from Works, 2½ per cent. less above gross discounts, carriage forward if sent from London Stocks.)

	Tubes.	Fittings.	Flanges.
Black Gas	60 %	50%	60%
Galvanised Gas	45 %	40%	50%
Blue Water	55 %	45%	55%
Galvanised Water	38½ %	35%	45%
Red Steam	50 %	40%	50%
Galvanised Steam	32½ %	30%	40%

C.I. Half-Round Gutters—London Prices, ex Works.

Per yd. in 6 ft. lengths.	Gutters.	Angles and Nozzles.	Stop Ends.
3 in.	1/2½	11½d.	3½d.
3½ in.	1/4	1/0½	3½d.
4 in.	1/5	1/2½	3½d.
4½ in.	1/6½	1/4	4½d.
5 in.	1/9½	1/5½	5½d.

O.G. Gutters.

3 in.	1/7	1/3½	3½d.
3½ in.	1/7	1/3½	3½d.
4 in.	1/8½	1/4	3½d.
4½ in.	1/10½	1/6½	4½d.
5 in.	2/3	1/9½	5½d.

RAIN-WATER PIPES, &c.

Per yd. in 6 fts.	Pipe.	Bends, stock angles.	Branches, stock angles.
2 in. plain	1/9½	1/2½	1/8½
2½ in. „	1/11½	1/4	2/0½
3 in. „	2/4½	1/8	2/6
3½ in. „	2/10	2/-	2/10½
4 in. „	3/3	2/4½	3/6

L.C.C. Coated Soil Pipes—London Prices, ex Works.

	Pipe.	Bends, stock angles.	Branches, stock angles.
	s. d.	s. d.	s. d.
2 in. per yd. in 6fts. plain	2 11	2 3	2 9
2½ in. „	3 5	2 6	3 5
3 in. „	4 1	2 9	4 0½
3½ in. „	4 5½	3 5	4 8½
4 in. „	4 11½	3 9½	5 5½

L.C.C. Coated Drain Pipes—London Prices ex Works.

	Pipe.	Bends, stocks angles.	Branches, stock angles.
	s. d.	s. d.	s. d.
3 in. per yd. in 9ft. lengths	4 3	5 9	7 8
4 in. „ „	6 3	6 11	9 6
5 in. „ „	7 10	12 0	16 3
6 in. „ „	9 6	15 0	20 9

Gasken for jointing, 38/6 per cwt.

Iron—	Per ton in London. £	s.	d.		£	s.	d.
Common Bars	13	0	0	to	14	10	0
Staffordshire Crown Bars—good merchant quality	14	5	0	..	15	5	0
Staffordshire "Marked Bars"	16	5	0	..	17	5	0
Mild Steel Bars	10	0	0	..	11	0	0
Steel Bars, Ferro-Concrete quality, basis price	10	0	0	..	11	0	0
Hoop Iron, basis price	12	0	0	..	13	0	0
„ Galvanised	27	0	0	..	28	0	0
Soft Steel Sheets, Black—							
Ordinary sizes to 20 g.	13	5	0	..	14	5	0
„ „ „ 24 g.	14	5	0	..	15	5	0
„ „ „ 26 g.	16	5	0	..	17	5	0
Sheets Flat Best Soft Steel, C.R. & C.A. quality—							
Ordinary sizes, 6 ft. by 2 ft. to 3 ft. to 20 g.	15	10	0	..	16	10	0
Ordinary sizes, 6 ft. by 2 ft. to 3 ft. to 22 g. and 24 g.	16	10	0	..	17	10	0
Ordinary sizes, 6 ft. by 2 ft. to 3 ft. to 26 g.	18	10	0	..	20	10	0
No. 1 quality £4 per ton extra.							
Flat and Galvanised Corrugated Sheets—							
Ordinary sizes, 6 ft. to 9 ft. to 20 g.	18	10	0	..	19	10	0
Ordinary sizes, 6 ft. to 9 ft. to 22 g. and 24 g.	19	0	0	..	20	0	0
Ordinary sizes, 6 ft. to 9 ft. to 26 g.	22	0	0	..	23	0	0
Sheets Galvanised Flat. Best quality—							
Best Soft Steel Sheets, 6 ft. by 2 ft. to 3 ft. to 20 g. and thicker	22	0	0	..	23	0	0
Best Soft Steel Sheets, 22 g. and 24 g.	24	0	0	..	26	0	0
Best Soft Steel Sheets, 26 g.	25	10	0	..	26	10	0
Cut Nails, 3 in. to 6 in.	19	0	0	..	20	0	0
(Under 3 in. usual trade extras.)							

Metal Windows.—Standard sizes, suitable for complete houses, including all fittings, painting two coats, and delivery to job, average price about 1s. 4d. to 1s. 7d. per foot super.

LEAD, &c.

(Delivered in London.)	£	s.	d.
Lead—Sheet, English, 4 lb. and up	42	10	0
Pipe in coils	44	0	0
Soil Pipe	46	0	0
Compo Pipe	47	0	0

Note—Country delivery, 30s. per ton extra : lots under 3 cwt., 3s. per cwt. extra, and over 3 cwt. and under 5 cwt., 1s. 6d. per cwt. extra. Cut to sizes, 2s. cwt. extra.

	£	s.	d.	
Old lead, ex London area, at Mills per ton	28	10	0	—
Do., ex country, carriage forward per ton	29	10	0	—

COPPER.

		s.	d.
Seamless Copper tubes (basis)	per lb.	1	1
Strong sheet	„	1	0
Thin	„	1	1
Copper nails	„	2	3
Copper wire	„	2	4

PLUMBERS' BRASS WORK.

Delivered in London.

New River Pattern Screw Down Bib Cocks for Iron.

½ in.	¾ in.	1 in.	1¼ in.	1½ in.	2 in.
29/-	45/-	76/-	153/-	246/-	510/- per doz.

New River Pattern Screw Down Stop Cocks and Unions.

½ in.	¾ in.	1 in.	1¼ in.	1½ in.	2 in.
41/6	62*-	92/-	174/-	300/-	588/- per doz.

New River Pattern Screw Down Main Ferrules.

½ in.	¾ in.	1 in.
39/6	60/-	116/6 per doz.

Caps and Screws.

1¼ in.	1½ in.	2 in.	3 in.	3½ in.	4 in.
7/6	10/-	14/-	23/-	30/-	42/- per doz.

Double Nut Boiler Screws.

½ in.	¾ in.	1 in.	1¼ in.	1½ in.	2 in.
7/6	11/-	17/-	29/-	36/-	63/- per doz.

Brass Sleeves.

1½ in.	2 in.	3 in.	3½ in.	4 in.
10/-	12/-	20/-	24/-	31/- per doz.

New River Pattern Croydon Ball Valves, S.F.

½ in.	¾ in.	1 in.	1¼ in.	1½ in.
35/-	56/-	98/-	162/-	228/- per doz.

Drawn Lead P. & S. Traps with Brass Cleaning Screw.

	1½ in.	1¾ in.	2 in.	3 in.	
8 lbs. P. traps	33/-	41/-	56/-	101/-	per doz.
8 lbs. S. traps	35/-	45/-	66/-	126/-	„

Tin—English Ingots, 2/10 per lb. Solder—Plumbers' 1/2, Tinmen's 1/5. Blowpipe 1/6 per lb.

PAINTS, &c.

		£	s.	d.
Raw Linseed Oil,	in pipes per gallon	0	3	1
„ „ „	in barrels „	0	3	3
„ „ „	in drums „	0	3	6
Boiled „	in barrels „	0	3	6
„ „ „	in drums „	0	3	9
Turpentine in barrels	„	0	5	5
„	in drums (10 gall.) „	0	5	7
Genuine Ground English White Lead, per ton (In not less than 5 cwt. casks.)		53	5	0
Genuine White Lead Paint— "Father Thames," "Nine Elms," "Park," "Supremus," "St. Paul's," "Morganswyte," "Polacco," "J." Brand and other best brands (in 14 lb. tins) not less than 5 cwt. lots per ton delivered		71	15	0
Red Lead, Dry (packages extra)	per ton	46	0	0
Best Linseed Oil Putty	per cwt.	0	15	0
Filocol	„	0	15	6
Size. XD Quality	firkin	0	3	6

Continued on next page.

*The information given on this page has been specially compiled for The Builder and is copyright. Our aim in this list is to give, as far as possible, the *average* prices of materials, not necessarily the highest or lowest. Quality and quantity obviously affect prices—a fact which should be remembered by those who make use of this information.

PRICES CURRENT OF MATERIALS (*contd.*)

GLASS.

ENGLISH SHEET GLASS IN CRATES OF STOCK SIZES.

	Per Ft.		Per Ft.
15 oz. fourths ..	3½d.	32 oz. fourths	7½d.
15 „ thirds	4½d.	32 „ thirds	9½d.
21 „ fourths ..	4½d.	Obscured Sheet, 15 oz.	4d.
21 „ thirds	5½d.	„ 21 „	5½d.
26 „ fourths ..	5d.	Fluted 15oz. 6½d., 21oz.	9½d.
26 „ thirds	7½d.	En'lled 15oz. 5½d., 21oz.	7½d.

Extra price according to size and substance for squares cut from stock.

ENGLISH ROLLED PLATE IN CRATES OF STOCK SIZES.

	Per Ft.
⅛ Rolled plate	4½d.
⅜ Rough rolled	5½d.
½ Rough rolled	5½d.
Figured Rolled, Baltic, Oceanic, Arctic, Stippolyte, and small and large Flemish White..	6½d.
Ditto, tinted	9d.
Rolled Sheet	6d.
White Rolled Cathedral	5½d.
Tinted do.	7½d.

Cast Plate is same price as rough rolled.

VARNISHES, &c.

		Per Gallon. £ s. d.
Oak Varnish.....	Outside	0 14 0
Fine ditto.....	ditto	0 16 0
Fine Copal	ditto	0 18 0
Pale Copal	ditto	1 0 0
Pale Copal Carriage	ditto	1 4 0
Best ditto.....	ditto	1 12 0
Floor Varnish	Inside	0 18 0
Fine Pale Paper	ditto	0 18 0
Fine Copal Cabinet	ditto	1 2 6
Fine Copal Flatting	ditto	1 0 0
Hard Drying Oak	ditto	0 18 0
Fine Hard Drying Oak.....	ditto	0 19 0
Fine Copal Varnish	ditto	1 0 0
Pale ditto	ditto	1 2 0
Best ditto	ditto	1 12 0
Best Japan Gold Size		0 12 6
Best Black Japan		0 10 0
Oak and Mahogany Stain (water).....		0 12 0
Brunswick Black.....		0 7 6
Berlin Black		0 14 6
Knotting (patent)		1 5 0
French and Brush Polish		0 17 0
Liquid Dryers in Terebine		0 9 0
Cuirass Black Enamel		0 7 0

BUILDERS' ESTATES

Mr. C. J. Warwick, builders' merchant, plumber and decorator, of Barking-road, East Ham, has left net estate of £11,469.

Mr. Evan Morgan, builder, of Edge-lane, Liverpool, has left net estate of £58,234.

Mr. Robert Johnstone Moffat, plumber and sanitary engineer, of Dumfries, has left £11,894.

Mr. Stephen Walker, builder, of Chigwell-road, Bournemouth, has left net estate of £10,925.

Mr. W. H. Kelly, building contractor, of "Haulgh Mount," Hedroomgate-road, St. Anne's-on-the-Sea, has left net estate of £32,860.

Mr. Charles Peck, builder, of Dartmouth, has left the gross estate of £21,990.

Mr. Elijah Warrington, contractor, of Littlewood, Rose-hill, Marple, Cheshire, late of New Mills, Derbyshire, has left £6,272.

Mr. John Nash, builder and contractor, of Montpelier-road, Kentish Town, has left estate of £34,300.

Mr. Hugh Stanley Pollard, managing director of G. Pollard & Co., Ltd., building contractors, of Taunton, has left the net estate of £8,822.

Mr. W. Westhead, decorator, of Wellington-road, Ashton, Preston, has left estate of the gross value of £7,186.

Mr. T. S. Tomlinson, builder and contractor, has left £5,753.

Mr. R. Stroud, builder, of Barley Hall, Ilford, has left £60,000.

Mr. John Mills, builder, of Lincoln, and a former Mayor of that town, has left £42,736.

Mr. Alfred Binks, builder, of Fountain-street, Morley, Yorks, has left £5,210.

Mr. T. Sanderson, builder, of Temple-street, Kingston-on-Hull, has left the gross estate of £6,409.

Mr. Harry Margrie, Camberwell, of Margrie & Son, builders and decorators, has left £7,266.

Mr. T. W. Shotton, plumber and gas fitter, Stapenhill, Burton-on-Trent, has left £5,390.

Mr. J. Mawson, decorator, of Wesley-street, Ossett, Yorks, has left £6,689.

Mr. A. Stewart, builder, of Langside House, Langside, Glasgow, has left estate of £21,269, in addition to real estate in Great Britain.

Mr. Wm. Tout, builder, of "The Crossways," Finchley-lane, Hendon, N.W., has left gross estate of £16,363.

Mr. John Park, retired builder, of 70, Menzies-road, Torry, left an estate of £20,010.

THE SCOTTISH BUILDER

NEW BUILDINGS IN SCOTLAND

Nairn.—ACADEMY.—The Nairnshire Education Authority has agreed to purchase the property known as Ivybank for the site of an extension to the Nairn Academy.

Paisley.—CLUBHOUSE.—The Dean of Guild Court has passed plans for the Town Council to erect a golf clubhouse and model yacht shed at Barshaw Park.

Buckhaven.—HOUSES.—The Town Council has decided to borrow £120,000 to cover the cost of erecting 300 houses. Plans were also passed for 44 houses at Methil, and 56 houses at Buckhaven.

Edinburgh.—MEMORIAL.—The final plans for the erection of a war memorial to American Scots will be adjusted during the summer by an American committee and the authorities in Edinburgh, where the monument is to be raised. The site will be in the Princes-street Gardens. The architectural setting and other details have yet to be settled. A total of £10,000 will be required.

Dumbartonshire.—EXTENSIONS.—The Education Committee has passed the following scheme:—Helensburgh area—Extension and reconstruction of Hermitage School. Vale of Leven area—Reconstruction of Bonhill School; extension and reconstruction of Vale of Leven Academy; provision of drill hall at Main-street School; and new R.C. school to take the place of St. Mary School. Dumbarton area—New R.C. secondary school; new primary and intermediate school to replace College-street School and relieve the congestion in the Academy; new special school; and reconstruction of Knoxland and West Bridgend Schools. Old Kirkpatrick area—Small reconstruction at Elgin-street School to provide additional accommodation; new special school; and possible extension of St. Stephen's R.C. School, Dalmuir. Kirkintilloch area—Extension of Twechar School; reconstruction of Townhead School to provide post-qualifying department; reconstruction of Lairdsland School; new R.C. secondary school, and a small extension of Lenzie Academy. Cumbernauld area—Small extension at Cumbernauld School.

Helensburgh.—HOUSES.—The Town Council has passed plans for the erection of four tenements of six houses each in West King-street.

Edinburgh.—ROAD.—The Streets and Buildings Committee of the Town Council has accepted a Dunblane firm's tender for the last portion of the Edinburgh–Glasgow road—from a point two miles east of Bathgate to Dechmont. The contract is valued at £79,000.

Stirling.—SCHOOL.—The Stirlingshire Education Authority has accepted the offer of contractors for the erection of a new school at Riverside, to cost £42,386.

Aberdeen.—BUILDING.—The Plans and Sewerage Committee of the Town Council has passed plans for the erection of and alteration to buildings in the city to a total of £20,611. They included 16 houses.

Stirlingshire.—HOUSING.—The Eastern District Committee of the County Council has accepted tenders for building at Airth 8 houses; Brightons, 16; Broomhill, 16; Glen Village, 8; Laurieston, 12; Polmont, 12; Redding, 16; Skinflats, 20; Stenhousemuir, 20; and the Housing Committee are about to approve tenders very soon for houses at Carronshore, 16; Whitecross, 8; Lime-road, 12; Maddiston, 12.

Longland.—FACTORY.—An important Scottish company has acquired the extensive works at Tongland, near Kirkcudbright, belonging to the Galloway Engineering Co., for the purpose of an artificial silk factory.

Burntisland.—HOUSES.—The Housing Committee are to erect 20 more houses in addition to those just started on the West Haugh House site.

Obituary.

The death has occurred, at Arbroath, of Mr. D. W. Hunter, road surveyor for the Arbroath district of the county of Forfar. He was 33 years of age.

BUILDING TRADE WAGES IN SCOTLAND.*

THE following are the present rates of wages in the building trade in the principal towns of Scotland. Every endeavour is made to ensure accuracy, but we cannot be responsible for errors that may occur:—

	Masons.	Bricklayers.	Carpenters, Joiners.	Plasterers.	Slaters.	Plumbers.	Painters.	Labourers—Masons', Bricklayers', Plasterers'.
Aberdeen	1/8	1/8½	1/8	1/8	1/8	1/8	1/7	10½d. to 1/1
Airdrie	1/8	1/8	1/8	1/8	1/8	—	1/6½	1/3
Alexandria.....	1/8	1/8	1/8	1/8	1/8	1/8	—	1/2½ to 1/3½
Arbroath	1/7	1/7	1/7	1/7½	1/7	1/7	1/5½	1/1½
Ayr	1/8	1/8	1/8	1/8	1/8	1/8	1/6½	1/3
Bathgate	1/8	1/8	1/8	1/8½	1/8	1/8	1/6½	1/2 to 1/3
Blairgowrie	1/7	1/7	1/7	1/7½	1/5	1/7	1/4	10d. to 1/-
Bo'ness	1/8	1/8	1/8	1/8	1/8	1/8	1/8	1/3
Coatbridge.....	1/8	1/8	1/8	1/8	1/8	—	1/6½	1/3 to 1/3½
Dumbarton	1/8	1/8	1/8	1/8	1/8	1/8	1/8	1/3½
Dumfries	1/7	1/7	1/7	1/7	1/7	1/7	1/7	1/2½
Dundee	1/8	1/8	1/8	1/8	1/8	1/8	1/8	1/3
Dunfermline	1/8	1/8	1/8	1/9	1/8	1/8	1/8	1/3½
Edinburgh	1/8	1/8	1/8	1/8	1/8	1/8	1/8	1/3½
Falkirk	1/7½	1/7½	1/7	1/8	1/7	1/7	1/6½	1/2½
Fort William.....	1/6	1/6	1/6	1/6	1/6	1/6	1/6	1/2
Galashiels	1/7	1/7	1/7	1/7	1/7	1/7	1/7	1/2½
Glasgow	1/8	1/8	1/8	1/8	1/8	1/8	1/8	1/3½
Greenock	1/8	1/8	1/8	1/9	1/8	1/8	1/7	1/0½ to 1/3½
Hamilton	1/8	1/8	1/8	1/9	1/8	1/8	1/6½	1/3½
Hawick	1/7	1/7	1/7	1/7-1/7½	1/7	1/7	1/7	1/2½
Helensburgh	1/8	1/8	1/8	1/9	1/8	1/8	1/7	1/3½
Inverness	1/5	—	1/5	1/4	1/5	1/5	1/4	1/- to 1/2
Kilmarnock	1/8	1/8	1/8	1/9	1/8	1/8	1/8	1/3½
Kirkcaldy	1/8	1/8	1/8	1/9	1/8	1/8	1/8	1/3½
Kirkwall.....	1/5	1/5	1/4	1/5	1/5	1/4	1/4	1/-
Lanark	1/8	1/8	1/8	1/9	1/8	1/8	1/6	1/0 to 1/3
Leith	1/8	1/8	1/8	1/8	1/8	1/8	1/8	1/3½
Motherwell.....	1/8	1/8	1/8	1/9	1/8	1/8	1/6½	1/3½
Perth	1/8	1/8	1/8	1/9	1/8	1/8	1/6½	1/3
Stirling	1/8	1/8	1/8	1/9	1/8	1/8	1/8	1/3½
Stirlingshire (Eastern District)	1/8-1/10	1/8-1/10	1/8	1/9	1/7	1/8	1/6½	1/3½
Wishaw	1/8	1/8	1/8	1/9	1/8	1/8	1/7	1/3½

* The information given in this table is copyright. The rates of wages in the various towns in England and Wales are given on page 675.

CURRENT PRICES FOR BUILDING WORK IN LONDON*

EXCAVATOR.

		s.	d.
Digging and throwing or wheeling and filling carts, and carting away to shoot—6 ft. deep	per yard cube	11	0
Add if in clay	" "	1	0
Add for every additional depth of 6 ft.	" "	0	6
Planking and strutting to trenches	per foot super	0	5
Do. to sides of excavation, including shoring	" "	1	0

CONCRETOR.

		s.	d.
Portland cement concrete in foundation 1 to 6	per yard cube	32	0
Add if in underpinning in short lengths	" "	7	0
Add if in floors 6 in. thick	" "	3	3
Add if in beams	" "	3	9
Add if aggregate 1 : 2 : 4	" "	10	0
Add for hoisting not exceeding 10 ft. beyond the first 10 ft.	" "	2	6

BRICKLAYER.

		£	s.	d.
Reduced brickwork in lime mortar and Fletton bricks	per rod	30	0	0
Add if in stocks	"	7	10	0
Add if in Staffordshire blues	"	22	0	0
Add if in Portland cement and sand	"	1	10	0

FACINGS.

Extra for facing in English or Flemish bond for every 10s. per 1,000 over the price of the common bricks	per ft. super	0	0	1½

POINTING.

Neat flat struck or weathered joint	" "	0	0	3

ARCHES.

Extra only to the price of ordinary brickwork :—				
Fair external in half brick rings	" "	0	0	10
Axed in stocks	" "	0	1	9
Rubbed and gauged jointed in putty camber or segmental	" "	0	6	0

SUNDRIES.

Damp course in double course of slates breaking joint and bedded in Portland cement	" "	0	1	0
Setting ordinary register grates and stoves	each	1	0	0
Setting kitchener, including forming flues, &c., with all necessary fire bricks	"	4	15	0

ASPHALTER.

		s.	d.
Half-inch horizontal damp course	per yard sup.	4	3
Three-quarter-inch vertical damp course	" "	8	6
¾ inch on flats in two thicknesses	" "	6	3
Angel fillet	per foot run	0	3
Skirting and fillet 6 in. high	" "	1	2

MASON.

		s.	d.
York stone templates fixed	per foot cube	13	0
York stone sills fixed	" "	22	0
Bath stone and all labour fixed	" "	10	6
Portland stone fixed	" "	20	0

SLATER.

Welsh 16 in. × 8 in. 3 in. lap, including nails	per square	72	9	
Do 20 in. × 10 in. Do. Do.	"	80	9	
Do. 24 in. × 12 in. Do. Do.	"	90	0	

CARPENTER AND JOINER.

Fir framed in plates	per foot cube	5	0	
Do. joists	" "	5	6	
Do. roofs, floors, and partitions	" "	6	0	
Do. trusses	" "	8	6	

	¾"	1"	1¼"	2"
Deal rough close boarding per sq.	35/6	40/-	45/-	72/-

		s.	d.
Flat centering for concrete floor, including struts or hangers	"	50	0
Do. to beams	per ft. sup.	1	0
Centres for arches	"	1	6
Gutter boards and bearers	"	1	0

FLOORING.

	¾"	1"	1¼"	1½"
Deal-edges shot per sq.		44/6	53/-	60/6
Do. tongued and grooved "		49/-	57/6	65/-
Do. matchings "	45/-	51/-		
Moulded skirting, including backings and grounds per ft. sup.	1/6	1/9	2/0	2/6

SASHES AND FRAMES.

		s.	d.
One-and-a-half moulded sashes or casements	per foot super.	1	10
Two Do. Do. Do.	" "	2	1
Add for fitting and fixing	" "	0	3
Deal-cased frames with 1 in. inner and outer linings, 1½ in. pulley stiles tongued to linings, hard wood sills with 2 in. moulded sashes in squares, double hung, double hung with pulleys, lines and weights; average size	" "	3	9

DOORS.

	1½"	1¾"	2"
Two-panel square framed per ft. sup.	2/1	2/4	2/6
Four-panel Do. "	2/5	2/8	2/11
Two-panel moulded both sides "	2/8	2/11	3/2
Four-panel Do. Do. "	2/11	3/2	3/5

CARPENTER AND JOINER—continued.

FRAMES.

		s.	d.
Deal wrot moulded and rebated	per foot cube	14	0

	1"	1¼"	1½"
Plain deal jamb linings framed per ft. sup.	1/7	1/8	1/11
Deal shelves and bearers "	1/4	1/6	1/9
Add if cross-tongued "	2d.	2d.	2d.

STAIRCASES.

	1"	1¼"	1½"	2"	2½"
Deal treads and risers in and including rough brackets	2/1	2/4	2/9	—	—
Deal strings wrot on both sides and framed	1/8	2/-	2/2	2/8	—

		s.	d.
Housings for steps and risers	each	0	11
Deal balusters, 1 in. × 1¼ in.	per ft. run	0	9
Mahogany handrail : average 3 in. × 3 in.	" "	6	0
Add if ramped	" "	11	10
Add if wreathed	" "	23	9

FIXING ONLY IRONMONGERY (INCLUDING SCREWS).

6 in. barrel bolts	8½d.	Rim locks	2/-
Sash fasteners	11½d.	Mortice locks	4/6
Casement fasteners	1/5	Patent spring hinges and letting into floor and making good	19/-
Casement stays	1/2		
Cupboard locks	1/5		

FOUNDER AND SMITH.

		s.	d.
Rolled steel joists	per cwt.	16	3
Plain compound girders	"	19	0
Do. stanchions	"	21	9
In roof work	"	27	6

RAIN-WATER GOODS.

	3"	4"	5"	6"
Half-round plain rebated joints ft. run	1/6	1/9	2/-	2/6
Ogee Do. Do. "	1/9	2/-	2/6	3/3
Rain-water pipes with ears "	1/9	2/7	—	—
Extra for shoes and bends each	4/4	5/11	—	—
Do. stopped ends "	1/11	2/4½	3/7	4/-
Do. nozzles for inlets "	2/2	2/7	3/10	4/3

PLUMBER.

		s.	d.
Milled lead and laying in flashings and gutters	per cwt.	57	0
Do. Do. in flats	"	56	0
Extra labour and solder in coated cesspools	each	6	9
Welf joint	per ft. run	0	6
Soldered seam	" "	1	6
Copper nailing	" "	0	6

	½"	¾"	1"	1¼"	2"	4"
Drawn lead waste per ft. run	1/2	1/9	2/-	3/4	4/-	—
Do. service "	1/8	2/2	2/7	3/10	—	—
Do. soil "	—	—	—	—	—	6/9
Bends in lead pipe each	—	—	—	—	3/3	8/2
Soldered stop ends "	1/2	1/8	2/1	2/10	3/6	—
Red lead joints "	11d.	1/-	1/3	1/11	2/4	4/10
Wiped soldered joints "	2/10	3/6	4/-	4/11	6/6	9/9
Lead traps and cleaning screws "	—	—	—	14/7	19/6	—
Bib cocks and joints "	6/4	9/7	15/4	41/-	—	—
Stop cocks and joints "	15/4	17/2	25/8	64/-	—	—

PLASTERER.

		s.	d.
Render, float and set in lime and hair	per yard sup.	2	4
Do. Do. Sirapite	" "	2	7
Do. Do. Keen's	" "	3	7
Add sawn lathing	" "	1	7
Add metal lathing	" "	2	6
(Not including hangers or runners, &c., for suspended ceilings.)			
Portland cement screed	per yard sup.	2	2
Do. plain face	" "	3	3
Mouldings in plaster	per 1 girth	0	1½
One-and-a-half granolithic pavings	per yard sup.	5	9

GLAZIER.

		s.	d.
21 oz. sheet plain	per foot sup.	0	8½
26 oz. Do.	" "	1	0
Obscured sheet	" "	1	1
⅛ in. rolled plate	" "	0	9
¼ in. rough rolled or cast plate	" "	0	10½
¼ in. wired cast plate	" "	1	4

PAINTER.

		s.	d.
Preparing and distempering, 2 coats	per yard sup.	0	9
Knotting and priming	" "	0	7
Plain painting, 1 coat	" "	0	9
Do. 2 coats	" "	1	2
Do. 3 coats	" "	1	9
Do. 4 coats	" "	2	4
Graining	" "	2	3
Varnishing twice	" "	1	9
Sizing	" "	0	3
Flatting	" "	0	7
Enamel	" "	1	1
Wax polishing	per foot sup.	0	6
French polishing	"	1	2
Preparing for and hanging paper	per piece, 2/- to 4/-		

* These prices apply to *new buildings only*. They cover superintendence by foreman and carry a profit of 10 % on the prime cost without establishment charges. A percentage of 1½ should be added for Employers' Liability and National Health and Unemployment Acts and from 4s. 6d. per £100 for Fire Insurance. The whole of the information given on this page is copyright.

TENDERS.

Communications for insertion under this heading should be addressed to "The Editor," and must reach him not later than Tuesday evening.

*** Denotes *accepted*. † Denotes *provisionally accepted*.**
‡ Denotes *recommended for acceptance*.
§ Denotes *accepted subject to modifications*.

ALTON.—Thirty-eight houses, at Chaunteingers estate, for the U.D.C :—
*Theo. Conway, Ltd., Weymouth £18,797

ANDOVER.—For theatre and shops. Mr. F. Henshaw, L.R.I.B.A., architect :—

Ringmer Building Works, Ringmer	£10,576	7	0
F. Beale & Sons, Andover	9,978	0	0
Grace & Marsh, Ltd., Croydon	9,966	0	0
Chivers & Sons, Ltd., Devizes	9,780	0	0
W. J. Harris, Basingstoke	9,579	0	0
Boodall & Sons, Basingstoke	9,294	0	0
*Sturgess Bros., Ludgershall	8,930	11	4

ASHFORD.—For (1) pair cottages; and (2) office and store, for the U.D.C. Mr. H. Wilson, electrical engineer :—

	(1)	(2)
T. S. Gwinnett	£1,236	£1,073
Sharman	1,091	788
W. Rumbold	1,080	790
*F. Knock	1,070	775

(All of Ashford.)

BEDDINGTON AND WALLINGTON.—Forty houses on the Miller's Orchard site, for the U.D.C. :—

	Wood Casement.	Steel Casement.
Grace & Marsh, Ltd.	£23,086	—
Johnson's Reinforced Concrete Co.	24,100	—
Cory & Cory	23,008	£23,008
F. W. Sawyer	21,734	—
Griffiths & Co.	21,698	21,804
Ellingham, Ltd.	21,300	—
R. Mansell	20,828	20,950
Calway Construction Co.	18,796	18,696
Triangular Construction Co.	18,550	18,450
Tibbenham Construction Co.	16,850	16,850

(All of London.)

BELFAST.—New hall, to seat 2,000 persons, with offices, cloak-rooms, &c., of steel frame construction on r.c. foundations, in Grosvenor-road, for the Grosvenor Hall Mission. Messrs. Young & Mackenzie, architects, 2, Wellington-place :—
*McLaughlin & Harvey, Ltd., Belfast.
Estimated cost, £50,000.

BILSBORROW.—Church of England, Bilsborrow-lane. Messrs. Austin & Paley, architects, 34, Castle Hill, Lancaster :—
*R. S. Wright & Son Lancaster £11,490 7 10
**Masonry*—A. O. Thomas, Lancaster.
**Plumbing and glazing*—Simpson & Co., Lancaster.
**Slating and plastering*—Thompson & Bailey, Lancaster.
**Heating engineers*—C. Seward & Co., Preston.

BIRMINGHAM.—Public house in Brookhill-street, for Mitchells & Butler's, Ltd., Cape Hill Brewery. Messrs. Harrison & Cox, architects, Colmore-row :—
*T. Lowe & Co., Ltd., Burton-on-Trent.

BLACKBURN.—Sixteen houses on land on the north-westerly side of Hollin Bridge-street, for the T.C. :—
‡A. Riding, Blackburn.

BLACKPOOL.—Twenty-six houses in Hawes Side-lane, for the T.C. :—
‡Richardson & Hawksworth.

BLACKPOOL.—Garage at Rigby-road, for the T.C. :—
‡H. Peers & Co.

BLACKPOOL.—Railing round the band stand and harbour at the public park, for the T.C. :—
*Macfarlane & Co.

BLACKPOOL.—Inside decorations at the Central Library premises, for the T.C. :—
*Walmsley & Sons.

BLACKPOOL.—Extension of switch-room annexe at the Electricity Works, for the T.C. :—
*Jos. Fielding & Sons (Blackpool), Ltd.

BLACKPOOL.—New stands and offices at the southerly end of the Bloomfield-road Football Ground, for the Blackpool Football Club. Messrs. Singleton & Halsall, architects, Dickson-road, Blackpool :—
*Harry Peers & Co., Bolton £15,000

BOOTLE.—Repair work at the existing brick chimney shaft at the Refuse Disposal Works in Pine-grove, for the T.C. :—
‡W. Hogg, Liverpool £198 15

BOOTLE.—New length of main flue leading to chimney shaft at Refuse Disposal Works, Pine-grove, for the T.C. :—
‡W. A. Gale Bootle £209

BOURNEMOUTH.—Additions to the convenience at the corner of King's and Charminster-roads, for the T.C. :—
J. Francis.
W. Hoare & Sons.
Symes, Chisham & Saunders.
J. E. Mitchell.
‡Hawkins Bros. £345

BRADFORD.—Reconstruction of premises in Kirkgate, for the Lancashire and Yorkshire Bank :—
*M. Booth & Sons.

BRIGHTON.—Alterations and improvements to premises, 77-83, North-street, for the Brighton Drapery Stores. Mr. W. H. Webber, architect, 7, Powis-grove :—
Builders—*J. Barnes & Co., Brighton.
Shop Fronts—*Fredk. Sage & Co., Ltd., London.

BURSLEM.—Sub-station at Wharf-street, for the Stoke T.C. :—
*G. M. Sambrook £699

CAMBRIDGE.—New wards, medical officers' quarters, &c., at the Cambridge Mental Hospital, for the Governing Committee. Mr. A. Paul MacAlister, F.R.I.B.A., architect, 20, St. Andrews-street :—
*Thackray & Co., Ltd., Huntingdon £27,000

CHELMSFORD.—Shelter and conveniences at junction of Baddow-road and Moulsham-street, for the T.C. Mr. E. J. Miles, engineer :—

W. Fincham & Sons, Chelmsford	£2,296	4	0
E. Rogers & Son, London	2,276	14	9
J. Eaton & Sons, Chelmsford	2,232	0	0
H. Potter, Chelmsford	2,212	0	0
*G. J. Hawkes & Sons, Chelmsford	2,175	10	0

COVENTRY.—Administrative department at the Infirmary, for the B.G. Messrs. Edwards & Shaw, architects, Birmingham :—
**Builder*—H. Cousins £5,660
**Heating Engineer*—W. A. Bennett 387

DENBIGH.—Twenty-two cottages and consequent roads in Myddleton-avenue, for the T.C. Mr. M. E. Morris, Sanitary Inspector :—
Griffiths & Snape, Rhyl £9,899
J. W. Jones & Co., Liverpool 9,550
*H. Lloyd Jones, Denbigh 9,212

EPSOM.—Alterations to Blocks D and F and laboratory at the Downs Hospital for Children, for the M.A.B. :—
J. Darch, Ltd., London £575
C. H. Boyd & Son, Ltd., London 517
Burnand & Pickett, Ltd., Wallington .. 497
‡J. Crewdson, Horley 479

ESSEX.—New drill hall for the Essex Territorial Army Force Association. Messrs. Roddick, Colvin & Clarke, architects, 4, Adelphi-terrace, Strand, W.C. :—
Builders—*C. Maidwell & Son, Stowmarket.
Heating—*Rosser & Russell, Ltd., London.
Lighting—*Epping Gas Co., Ltd., Epping.

FREEBRIDGE LYNN.—For one pair or, alternatively, four houses in a row, for Castleacre, Gayton, Grimstone, and Great Massingham, for the R.D.C. Mr. H. Bell, architect :—

Bone & Sons, King Lynn (in block of 4)	£2,100	0	
Impson, Swaffham (per pair)	1,250	0	
Knape & Sons, King Lynn ,,	922	10	
W. H. Hill, King Lynn .. ,,	841	0	
Hodson & Sons, Great Massingham ,,	800	0	
*Walter Moore, Gaywood .. ,,	768	10	

GOSFORTH.—Erection of (*a*) 48 four-roomed houses; and (*b*) 36 three-roomed houses, on the Coxlodge housing site, for the U.D.C. Mr. G. Nelson, surveyor :—

	(*a*)	(*b*)
Wm. C. Fleck, Gosforth	£21,888 0	£15,858 0 0
J. A. Hindmarsh, Gosforth	21,504 0	14,832 0 0
G. E. Young, Bishop Auckland	21,264 0	14,940 0 0
W. R. Charles & Co., Birtley	21,168 0	14,292 0 0
H. M. Nowell, Newcastle	21,136 16	14,486 8 0
Revell & Revell, Gosforth	21,120 0	14,760 0 0
J. Wilkinson, Newcastle	21,096 0	14,832 0 0
T. J. Lee & Co., Chester-le-Street	21,000 0	15,300 0 0
Lough Bros., Contractors, Ltd., Consett	20,974 0	14,888 0 0
H. W. Hornby, Gosforth	20,649 0	14,328 0 0
W. J. Wright, Heaton	20,640 0	14,472 0 0
J. W. Braithwaite & Co., Heaton, Amble	20,400 0	14,400 0 0
Henry Kelly, Ltd., Newcastle	20,160 0	13,860 0 0
Wm. Hall, Contractors, Ltd., Gateshead	19,872 0	13,680 0 0
H. Kindred, Co. Durham	19,853 12	14,009 6 6
Wm. Spetch, Gosforth	19,680 0	13,860 0 0
R. Carse & Son, Amble	19,573 0	13,801 1 0
*Hindmarsh & Son, Newcastle	18,968 0	12,829 7 0

HENLEY.—For (*a*) 10 cottages, non-parlour type; and (*b* five bungalows, for the R.D.C. Mr. E. V. Ive, architect, "Hillside," Henley-on-Thames, Oxon :—
*A. Janes, Sonning Common, near Reading.
(Subject to the approval of the Ministry.)

HUNTINGDON.—Thirty houses, for the T.C. Mr. E. J. Saunders, engineer :—

	Type No. 1.	Type No. 2.	Type No. 3.
M. J. Allen & Sons, Brampton	£420	£410	£345
V. Vinnell, Huntingdon	431	419	352
Pettits, Ltd., Godmanchester	490	470	388
J. Cracknell, Ltd., Peterborough	496	466	384
F. B. Thackray & Co., Huntingdon	495	478	383
Hardwick & Burrows, Buckden	—	—	343

KILLARNEY.—Fourteen houses, for the U.D.C. :—
R. Buckley, Cove £5,250
*Gallivan & Sons, Killarney 5,265

KINGSBRIDGE.—Eighteen houses at Rock Park for the U.D.C. Mr. J. Hole, architect :—

Williams & Bishop, Ringwood, Hants	£9,450	18	
J. W. C. Scoble, Kingsbridge	9,108	0	
E. Russell, Plymouth	8,585	0	
*E. C. Lea & Co., Exeter	8,460	0	

KNUTSFORD.—Sewerage for the town, for the U.D.C. :—
*Hayes & Son, Stockport.

LEEDS.—Boiler house buildings at the University, for the Works Committee. Mr. P. Waterhouse, architect :—
*Armitage & Hodgson, Ltd.

LEEDS.—Extensions to the Weetwood Hall, for University Buildings. Messrs. Chorley, Gibbon & Foggitt, architects, Leeds :—
*Armitage & Hodgson, Ltd.

LINCOLN.—Twenty-eight houses on the Nettleham road site, for the City Council :—
*F. W. Horton ..... per house £488
(Subject to M.H. approval.)

LIVERPOOL.—New premises in St. Peter's-square, for the Athenæum Club. Messrs. Willink & Dod, architects, Cunard Buildings :—
§Joshua Henshaw & Sons £45,574

LIVERPOOL.—New car shed and administration block at Smithdown-road, for the T.C. The Land Steward and Surveyor :—
Building—
*Hughes & Stirling £43,775
Steelwork—
*Redpath, Brown & Co., Ltd. 5,770

LIVERPOOL.—Alteration to 3, Deane-road, and the erection of an electric sub-station, for the T.C. :—
*F. & T. Chappell, Liverpool £1,526

LIVERPOOL.—Two self-acting valve houses on the Rivington Aqueduct, at the L.M. & S. Railway Co.'s Hindley Station and at Platt Bridge, for the T.C. The Water Engineer :—
*Byron Bros., Hindley £158 5 £204 16

LIVERPOOL.—Supply and delivery of steel pipes and other special pipes in connection with the third instalment, Vyrnwy Supply, Hirnant-Morda Section, for the T.C. The Water Engineer :—
*Cochrane & Co., Ltd., Middlesbrough £46,252 15 9

LIVERPOOL.—Bowling green shelter at Newsham Park, for the T.C. :—
*F. Dobson & Co., Liverpool £135 10

LIVERPOOL.—Boundary fence on the north side of the Highfield Sanatorium, for the T.C. The Land Steward and Surveyor :—
*C. & G. L. Deseer, Ltd., Liverpool £473

LIVERPOOL.—Bowls pavilion, shelters, and men's and women's conveniences, at Allenby-square Gardens, for the T.C. :—
*Haugh & Pilling, Liverpool £796

LIVERPOOL.—Fifty-one houses, for the T.C. :—
‡W. E. Hughes, Birkenhead .. per house £510

LONDON.—Building brickwork settings for steam boilers and economiser, at the Southern (upper) Hospital, for the M.A.B. :—

Chimneys, Ltd., London	£2,310	0	0
J. Thompson (Wolverhampton), Ltd., Wolverhampton	1,900	0	0
S. P. Bidder & Co., Manchester	1,892	7	3
H. & T. Danks (Netherton), Ltd., Dudley	1,800	0	0
Reading Boiler Setting Co., Ltd., Reading	1,797	0	0
J. Fox & Sons, London	1,788	0	0
E. Danks & Co. (Oldbury), Ltd., Oldbury	1,685	0	0
Poulton & Son, Reading	1.555	0	0
‡W. Hamer & Sons, Ltd., Bury	1,532	0	0

LONDON.—Alterations and additions, and cleaning and painting, at St. Luke's Hospital, for the M.A.B. :—

D. Leighton & Son, Lowestoft	£2,900	10	
W. J. Croft, Lowestoft	2,795	0	
‡J. Hocking & Co., Charlton	1,675	0	

LONDON.—Cleaning and painting and repairs at the Woolwich Casual Ward, for the M.A.B. :—

D. C. Bowyer, Belvedere	£285	15	
J. Darch, Ltd., Blackfriars	275	0	
W. Harris, Ltd., Woolwich	273	0	
Edwards Construction Co., Ltd., Eltham	249	0	
‡P. Miller & Son, Dartford	176	10	

LONDON.—Cleaning and painting and repairs at the Paddington Casual Ward, for the M.A.B. :—

Dollman & Morley	£422	0	0
A. C. Mackinlay	342	0	0
L. Kazak	296	0	0
D. C. Bowyer	294	5	6
W. Chappell	285	0	0
C. H. Boyd & Son	282	0	0
J. Darch, Ltd.	265	0	0
Fassnidge & Son, Ltd.	255	0	0
Edwards Construction Co., Ltd.	253	0	0
W. Hussey	250	0	0
J. W. Buckingham & Sons	250	0	0
‡W. Harris, Ltd.	211	0	0

(All of London.)

LONDON.—Cleaning and painting work at the Western Ambulance Station, for the M.A.B. :—

Mavat	£270	0	0
Edwards Construction Co., Ltd.	256	0	0
J. B. Boorman & Son	252	1	8
J. Darch, Ltd.	250	0	0
C. H. Boyd & Son, Ltd.	242	0	0
W. Hussey	215	0	0
Fassnidge & Son, Ltd.	208	0	0
Burnand & Pickett, Ltd.	207	0	0
W. Harris, Ltd.	199	0	0
A. H. Inns, Ltd.	180	0	0
‡D. C. Bowyer	171	12	6

(All of London.)

LONDON.—Painting work at the Northern Hospital, for the M.A.B. :—

O. Williams	£939	0	0
L. Kazak	894	0	0
C. H. Boyd & Son, Ltd.	832	0	0
D. C. Bowyer	824	7	6
E. Proctor & Sons	823	0	0
Edwards Construction Co., Ltd.	800	0	0
F. Firth, Shipley	790	10	0
J. Hocking & Co.	737	0	0
‡W. Harris, Ltd.	689	0	0

(All of London.)

LONDON.—Cleaning and painting work at the South-Western Ambulance Station, for the M.A.B. :—

J. Hocking & Co.	£497	0	0
P. G. Houghton	369	0	0
J. Darch, Ltd.	305	0	0
Burnand & Pickett, Ltd.	284	0	0
C. H. Boyd & Son, Ltd.	272	0	0
D. C. Bowyer	257	9	6
A. H. Inns, Ltd.	249	0	0
H. Bragg & Sons, Ltd.	237	0	0
Edwards Construction Co., Ltd.	230	0	0
J. B. Boorman & Son	228	6	0
F. Kinnaird & Co., Ltd.	196	0	0
‡W. Harris, Ltd.	164	0	0

(All of London.)

LONDON.—Cleaning, painting and repairs at the North-Western Hospital, for the M.A.B. :—

Edwards Construction Co., Ltd.	£1,600	0	0
E. Proctor & Sons	1,599	0	0
Dollman & Morley	1,582	0	0
J. Hocking & Co.	1,579	0	0
D. C. Bowyer	1,437	18	9
W. Harris, Ltd.	1,428	0	0
L. Kazak	1,410	0	0
C. H. Boyd & Son, Ltd.	1,292	0	0
J. W. Buckingham & Sons	1,250	0	0
‡W. S. Sharpin	1,243	10	0
A. C. Mackinlay	1,235	10	0

(All of London.)

LONDON.—Reconstruction of the boiler house, &c., at Southern (upper) Hospital, for the M.A.B. :—

Randall (Contractors), Ltd., London	£9,246	9	9
Fairweather & Ranger, London	6,960	19	0
Clarke & Leathy, Ltd., Erith	6,635	0	0
‡J. W. Ellingham, Ltd., Dartford	6,288	0	0

LONDON.—Installation of electric lighting at the Southern (lower) Hospital, for the M.A.B. :—

Taylor & Allen, Ltd., Bootle	£4,750	0
H. B. Giles, Cardiff	4,637	0
S. Dixon & Son, Ltd., Leeds	4,548	0
Burdette & Co., Ltd., London	4,520	0
Kershaws, Manchester	4,500	0
Toy & Winslow, London	4,150	0
Coley & Swinnerton, Ltd., Wolverhampton	4,124	10
Brightside Foundry & Engineering Co., Ltd., London	3,943	0
Smethurst & Co. (London), Ltd., London	3,912	10
Read & Partners, Ltd., London	3,748	0
T. Clarke & Co., Ltd., London	3,700	0
‡Alpha Manufacturing & Electrical Co., Ltd., London	3,010	0

LONDON.—Dwellings in Shepherdess-walk, Turner's-place and Wenlock-road, for the City Corporation :—

S. E. Moss	£105,668
A. Roberts & Co., Ltd.	105,280
L. & W. Whitehead, Ltd.	101,837
Thomas & Edge	101,400
F. & G. Foster	101,043
Walter Jones & Sons, Ltd.	99,950
Holliday & Greenwood, Ltd.	99,398
Allen Fairhead & Sons, Ltd.	98,567
Walter Lawrence & Sons, Ltd.	98,282
Patman & Fotheringham, Ltd.	96,669
G. B. Farrar & Co.	95,668
‡Hall, Beddall & Co., Ltd.	82,987

LONDON.—Brick sewer in Paper-street for the existing pipe sewers and the reinverting of the sewers beneath Whitecross-street, for the City Corporation :—

Kinnear, Moodie & Co.	£9,277	4	9
Daniel T. Jackson	8,648	2	4
‡D. R. Paterson, Ltd.	8,315	2	6

LONDON.—Further improvement of the Barlby-road Recreation Ground by the erection of a shelter on the west side of the ground, and erection of a convenience for the use of both sexes, for the Kensington B.C. :—

‡Lane Bros.	£308 10

LYMM.—Twenty houses on site at Broom Edge, for the D.C. Mr. D. Mort, surveyor :—

*Brew Bros., Cadishead.

MANCHESTER.—Sub-contractors on houses on the Moston (Broadway) estate, for the T.C. :—

Gerrard's Contract—
*J. Toft, Patricroft, for slating.

Coralite Construction Co.'s Contract—
*Manchester Stone & Slate Co., Ltd., for roofing.
*H. Batty, West Gorton, for plumbing.
*G. F. Holding, Brooks's Bar, for plastering.
*Mayo & Astley, Rusholme, for painting.

Leach & Unsworth's Contract—
*J. Frost & Sons, Blackpool, for painting.
*J. V. Pyatt, Manchester, for electric light installation.

MANCHESTER.—Rebuilding of the Park-place Police and Fire Station, for the T.C. :—

General contractor—*C. H. Normanton & Son, Ltd., Manchester.
Masons—*F. & J. Halliwell, Manchester.
Slaters—*T. Kilburn & Son, Manchester.
Plumber, glazier, and gasfitter—*A. J. Heron, Manchester.
Plasterers and painters—*O. W. Williams & Co., Manchester.
Smiths and ironfounders—*J. Webb & Sons, Ltd., Bury.

MANCHESTER.—General offices, mess room, &c., at the Partington Gas Works, for the Corporation. Mr. W. Newbigging, consulting engineer, 5, Norfolk-street :—

*Fram Reinforced Concrete Co., Ltd.

MANCHESTER.—Construction of new lairs at City Abattoirs, for the T.C. :—

Builders—*Fearnley & Sons, Ltd., Salford.
Bricklayers and concretors—*B. Morton & Sons,
Masons—*J. Ridyard & Sons, Ashton-under-Lyne.
Plumbers—*T. L. Lightfoot & Co.
Painters—*Jones & Jackson.
Smiths and ironfounders—*Redpath, Brown & Co.

MANCHESTER.—Bowl house and shelter in Beach-road Recreation Ground, for the T.C. :—

*Fearnley & Sons, Ltd., Salford.
Mason—*A. Mackay, Oldham.
Roof tilers—*Beaumonts, Ltd.
Plumber and glazier—*R. Crabtree.
Painter—*Horrocks & Hogg.

MANCHESTER.—Covering swimming pool in Cringle Fields, for the T.C. :—

*W. Richardson & Co., of Gorton.

MARGATE.—Sea walls, promenades, cliff café, balconies, new ballroom, &c., and other works, forming first section of proposed bathing pool scheme at Cliftonville, for Clifton Baths (Margate), Ltd. Mr. C. S. F. Palmer, A.R.I.B.A., architect, 16, Adrian-square, Westgate-on-Sea :—

Builders—Rice & Son, Margate.
Steelwork—H. Young & Co., London.

MARPLE.—New coal store, boiler house, chimney, steelwork stanchions, girders, steel roofs, for the D.C. Mr. H. K. Law, engineer and manager, Gas Works, Marple Bridge, Stockport :—

Building works—Vessey Bros., Marple.
Steelwork—H. Parkes & Nephew, Stockport.

MOLESEY.—Pair of houses on the Beauchamp-road site, for the Council :—

*Wheatley & Sons £1,075
(Subject to M.H. approval.)

NEWCASTLE-UNDER-LYME.—Provision of unclimbable fencing to Mr. Carryer's land adjoining the New-road, for the T.C. :—

L. Rawlinson	£203	15	
J. Cooke	155	0	
Taylor & Co.	148	5	
‡S. Heath & Son	143	9	

NEWCASTLE-UNDER-LYME. — Eighty-two houses on the Cross Heath housing scheme, for the Corporation. Mr. A. A. Pattison, surveyor :—

Paul Pemberton, Tunstall	£47,700
E. Johnson, Audley	47,094
Moddock Bros., Audley	46,910
F. G. Taylor, Newcastle-under-Lyme	44,457
Eadie Towers, Wolverhampton	42,277
†S. Heath, Newcastle	42,098
Stanleys, Ltd., Newcastle-under-Lyme (Type "A" only)	21,588

NORMANTON (YORKS).—Thirty-four houses on the Hanson House estate, for the U.D.C. :—

*P. Rhodes, Ltd., Leeds £15,309

OXFORD.—Seventy-six houses on the Weirs-lane site, for the T.C. :—

‡W. H. Jones & Son ..... each £459

OXFORD.—Construction of the Paradise-street convenience, for the T.C. :—

‡T. H. Kingerlee & Sons £394

PLYMOUTH.—Repairs to 2, North Prospect, for the C.B. :—

*C. Lobb & Co £100

PLYMOUTH.—Repairs to 31, St. John-street, Devonport, for the C.B. :—

*W. Richardson £140

PRESTWICK.—Seventy-two houses at Glenburn and New Prestwick sites, for the T.C. Mr. F. Pritty, Burgh Engineer and Architect. Quantities by Mr. R. Carruthers, 219, St. Vincent-street, Glasgow :—

Brickwork—
*A. McDougall & Co., Glasgow .. £8,211 5 1

Joiner work—
*Wm. Govan & Sons, Ltd., Prestwick 6,308 7 8

Slater and roughcast—
*A. C. White & Co., Glasgow 2,216 6 6

Plumber work—
*Wm. Auld & Sons, Ayr 3,903 7 6

Plaster work—
*J. Leggat & Sons, Ayr 2,040 8 0

Glazier—
*G. G. Kirk, Ltd., Ayr 120 0 0

Grates and cookers—
*J. Youden & Sons, Ltd., Glasgow 1,000 0 0

Ironmongery—
*H. Mathieson & Sons, Glasgow 148 8 4

Painter work—
*P. McKerracher & Son, Glasgow 571 2 4

REIGATE.—Houses for the R.D.C. :—

*Pink & Oram—
8 at Burstow site £3,860
6 at Leigh site 2,863
*Walter, 8 at Chipstead 3,982

ROCHDALE.—Conveniences and tramway offices in Faulkner-street, for the C.B. Borough Surveyor :—

*J. E. Rangeley, Rochdale.

ROCHDALE.—Garage in Mellor-street, for the C.B. Borough Surveyor :—

*R. & T. Howarth, Rochdale.

ROCHDALE.—Transformer house at the Corporation Electricity Works, for the C.B. Borough Surveyor :—

*R. & T. Howarth, Rochdale.

ST. THOMAS.—Four houses at Whimple, Exeter, for the R.D.C. Messrs. R. Challice & Son, architects and surveyors, 7, Bedford Circus, Exeter :—

S. Ellis & Son, Exeter	£2,580	0	0
F. J. Luxton & Son, Ottery St. Mary	2,490	0	0
A. E. Eveleigh, Exeter	2,403	10	4
N. Pratt & Sons, Ltd., Exeter	2,384	0	0
W. J. Grainger, Whimple	2,250	0	0
E. Streat, Ottery S. Mary	2,197	0	0
*E. Hansford & Son, Ottery St. Mary	2,065	13	0

SALFORD.—Slipper Baths and washhouse on land situate at Hodge-lane, for the C.B. :—

‡Fearnley & Sons, Ltd., Salford £31,716

SCARBOROUGH.—New pumping station at Lower Oliver's Mount, for the Corporation :—

*Raine, Hallett & Co., Scarborough £650

SHANKLIN (I. OF W.).—Ten semi-detached houses, for the U.D.C. :—

†Rousell & Son, Ventnor ..... each £587

SHEFFIELD.—Converting workshop at Denison-street into office, for the T.C. :—

*Ash, Son & Biggin, Ltd. £239

SHEFFIELD.—Sub-station at Killon Hill, for the T.C.:—

*G. Longden & Son, Ltd. £1,299

SOUTH SHIELDS.—Alterations to 10–11, Fowler-street, for the T.C. :—

*Thornton & Co., South Shields £1,095

SOUTH SHIELDS.—Convenience at Cleadon Park, for the T.C. :—

*Henderson Bros., South Shields .. £501 5 6

SPALDING.—Fifty-four houses, for the U.D.C. Mr. W. St. Leger Crowley, A.R.I.B.A., architect :—

For a Block of Six, Type S26.

	Brick and Slate.			Brick and Tile.		
Wm. Crane, Ltd.	£3,027	0	0	£2,998	0	0
J. R. Baker	2,686	10	0	2,644	10	0
*Notter & Son	2,685	7	7	2,621	17	1
J. Arch	2,683	0	0	2,633	0	0
C. H. Cruise	2,650	9	0	2,630	7	0
A. O. Brett	2,649	0	0	2,630	0	0
Spalding Contracting Co.	2,642	11	0	2,627	0	0
Concrete construction with Tile Roofs.						
Triangular Construction Co., Ltd.				2,828	0	0
D. G. Underdown, Ltd.				2,520	0	0
For a Block of Four, Type S27F.						
Wm. Crane, Ltd.	1,767	0	0	1,750	0	0
C. H. Cruise	1,632	11	6	1,611	10	0
A. K. Stott	1,630	0	0	1,610	10	3
A. O. Brett	1,627	0	0	1,613	10	0
Spalding Contracting Co.	1,620	0	0	1,608	3	0
J. Arch	1,586	0	0	1,555	0	0
*Notter & Son	1,543	12	0	1,511	9	6
Concrete construction with Tile Roofs.						
Triangular Construction Co., Ltd.				1,652	0	0
D. G. Underdown, Ltd.				1,564	0	0
For a Block of Six, Type S27.						
Wm. Crane, Ltd.	2,652	0	0	2,630	0	0
C. H. Cruise	2,460	3	0	2,435	4	9
A. K. Stott	2,445	0	0	2,420	0	0
Spalding Contracting Co.	2,439	7	0	2,415	11	6
J. Arch	2,379	0	0	2,330	0	0
*Notter & Son	2,314	14	6	2,266	10	9
Concrete construction with Tile Roofs.						
Triangular Construction Co., Ltd.				2,478	0	0
D. G. Underdown, Ltd.				2,340	0	0

STONE.—For (*a*) 46 houses, and (*b*) 10 pairs on the Parson's Field site, for the U.D.C. :—
*Eadie Towers & Co..... (*a*) each £524
(*b*) " 549
(Subject to M.H. approval).

SUNBURY.—800 yds. of unclimbable iron fencing on the Nursery-road watercourse site, for the U.D.C. :—
*T. W. Palmer & Co., Merton.. £560 13 4

SUNDERLAND.—Construction of the new Wearmouth Bridge, for the T.C. :—
‡Sir William Arrol & Co., Glasgow.

THATCHAM (BERKS.).—Twenty houses, for the R.D.C. Mr. E. G. Hampshire, architect and surveyor :—

Tull & Fulbrooke, Thatcham	£9,403 0
Cooke Bros., Newbury	9,380 0
H. Langdon, Thatcham	9,040 0
W. Benham, Newbury	8,730 10
*W. Herbert, Thatcham	8,700 0

TORRINGTON (DEVON).—Seven houses at Goose Green, for the T.C. Mr. H. Settle, surveyor :—

H. V. Bowden, Torrington	£3,033 3 0
T. Piper & Sons, Torrington..	2,940 0 0
*A. Darch & Sons, Torrington..	2,776 18 4

UCKFIELD.—Twelve houses in Selby-road, for the U.D.C. :—
*W. Banks, Framfield..... £5,422
(Subject to M.H. approval).

WARWICK.—Forty houses in All Saint's and Beauchamp-roads, for the T.C. :—

Geo. Hunt & Sons, Shipton-on-Stour	£23,165
H. Morgan, Birmingham	21,718
Standbridge & Parker, Leamington..	19,204
E. E. Batchelor, Harbury, near Leamington	18,860
‡R. P. Gathercole, Leamington	17,535

WATFORD.—Twenty-six houses on the Wiggenhall estate, for the T.C. :—
‡S. E. Moss, Southend..... £13,070

WAYLAND.—Twelve houses, for the R.D.C. :—
*H. C. Tufts, Hingham, Norfolk—

Attleborough—Four houses	£1,750
Watton—Four houses	1,580

*S. Tennant & Sons, Watton, Norfolk—
Ovington—Four houses 1,600

WINDERMERE.—Sewage disposal. Messrs. Willcox & Raikes, civil engineers, 63, Temple-row, Birmingham :—

A. Monk & Co., Irlam	£6,020 18 6
E. Henderson & Son, Ltd., Newcastle-on-Tyne	4,997 0 0
A. Graham, Sons & Co., Huddersfield	4,634 4 8
J. Braithwaite & Son, Windermere	4,327 4 0
Morgan & Cleghorn, Ltd., Carlisle	4,111 4 9
Pattinson's (Windermere), Ltd.	3,577 14 6

WOLVERHAMPTON.—Providing and fixing two fire escape staircases at the Municipal Secondary School, for the T.C. :—
‡Haywards, Ltd., London..... £134 10

WORKINGTON.—Twenty parlour and 30 non-parlour type houses, for the T.C. :—
*T. Johnstone, Workington..... £26,479 10

WORTHING.—Lighting of the pier pavilion, for the T.C. :—
*H. J. Galliers £1,458

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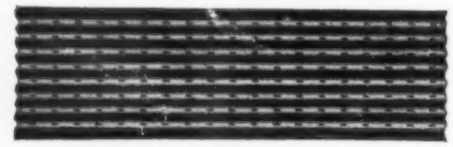

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